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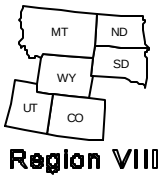
CHARACTERIZATION OF DIOXINS, FURANS AND PCBs IN SOIL SAMPLES COLLECTED FROM HISTORIC USE AREAS OF THE ROCKY MOUNTAIN ARSENAL

October 2000



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working in cooperation with:

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APPROVALS

This report has been prepared for and by the U.S. Environmental Protection Agency, Region 8. The results and conclusions presented in this report are accepted by EPA Region 8 as correct and appropriate.

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ACKNOWLEDGMENTS

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1.0 INTRODUCTION

Dioxins are a class of chemicals that are of potential human health concern because they may pose an increased risk of cancer and other adverse health effects at very low exposure levels. As a consequence, regulatory agencies often perform a thorough evaluation of potential risks from dioxins at sites of regulatory concern, especially sites involved in the manufacture of certain chlorinated pesticides and other chemicals.

One site that is of potential concern to the USEPA and the State of Colorado is the Rocky Mountain Arsenal (RMA), located near Denver, Colorado. This site was used in the past for the manufacture of chlorinated pesticides as well as other chemicals. As a consequence, questions have been raised as to whether or not dioxin levels in site soils might be of potential concern to on-site workers or visitors.

In order to investigate this question, USEPA Region 8, working in cooperation with the State of Colorado and the Rocky Mountain Arsenal Remedial Venture Office, has undertaken a series of studies to characterize the levels of dioxins in on-site and off-site soils. This report summarizes the results of a study designed to characterize dioxin levels in the South Plants area of RMA (this was the core area historically used for pesticide manufacture), as well as at a number of other on-site locations where past land uses might have led to increased levels of dioxins.

Other reports which are part of this project and which provide additional information on the absolute and relative level of dioxins in on-site and off-site soils include:

Evaluation of Potential Human Health Risk from Dioxins, Furans and PCBs in Soil at the Western Tier Parcel of the Rocky Mountain Arsenal (USEPA 2000a)

Characterization of Dioxins, Furans and PCBs In Random Soil Samples Collected from the Rocky Mountain Arsenal (USEPA 2000b)

Characterization of Dioxins, Furans and PCBs In Soil Samples Collected from the Denver Front Range Area (USEPA 2000c)

2.0 METHODS

A detailed description of the rationale, methods, and Standard Operating Procedures (SOPs) used in this study are provided in the Project Plan for the study (USEPA 1999c). A summary of key elements of the study design and of the methods employed is presented below.

2.1 Calculation of TEQ

2,3,7,8-Tetrachlorodibenzodioxin (TCDD) is the most potent of a group of related chemicals that include other congeners of dioxins, furans, and polychlorinated biphenyls (PCBs). For the purposes of this report, the term "dioxins" is meant to refer to the set of 17 dioxins and furans and the set of 12 PCBs that bind to the aryl hydrocarbon (Ah) receptor and possess toxic characteristics similar to those of TCDD. These so-called "Ah-agonists" are listed in **Table 1**.

Not all dioxin congeners are equally toxic. The relative toxicity of a congener, compared to that of TCDD, is expressed in terms of the Toxicity Equivalency Factor (TEF). **Table 1** lists consensus TEF values for mammals (including humans), birds, and fish. These TEF values were developed by a panel of experts assembled by the World Health Organization (Van den Berg et al. 1998). Note that TEFs are often based on limited data, and so they are only approximations of the relative toxicity of each congener, rounded to the nearest half order of magnitude.

The aggregate toxicity of a mixture of different dioxins in an exposure medium (soil, food web items, etc.) is a complex function of a) concentrations of each congener in media, b) daily intake of the medium, c) absorption of each congener from that medium, and d) congener-specific TEF values. However, for purposes of screening-level evaluations of dioxin concentrations in soil samples, it is usually most convenient to calculate the concentration of TCDD-Equivalents (TEQ) present in the soil, as follows:

$$TEQ = \sum_{i=1}^{i=29} (C_i \times TEF_i)$$

This approach allows a comparison of different soils in terms of a single value (the TEQ for the sample) rather than having to compare up to 29 different values. For the purposes of this report, the TEQ values are based on the TEFs for mammals (humans).

2.2 Soil Sampling

Sampling Locations

Figure 1 provides a map of the RMA, and indicates the locations of samples collected for this study.

The area of chief potential concern is the South Plants area, located in the south-center of the site. In the past, this area was the chief location of pesticide and chemical manufacturing activities. In order to plan the collection off samples in this area, a 12-section grid was laid out over the South Plants area as shown by the **blue lines** in Figure 1. Within each grid, a set of five grab samples were collected from random sampling locations, as shown by the **blue crosses**. These five grab samples were combined into a single composite sample (one for each grid), as described blow.

In addition to South Plants, there are a number of other areas on the RMA where historic land uses or waste disposal activities might have resulted in increased levels of dioxins in soil. These areas of potential concern are described in **Table 2**. One composite sample (prepared from five randomly located grab samples, as described above) were collected from each of these 10 "purposeful" sampling locations, as shown by the **black crosses** in Figure 1.

Sampling Depth

Because dioxins nearly always bind tightly to soil, it is expected that any dioxin contamination in soil that has occurred chiefly as result of atmospheric deposition and/or application of herbicides will be restricted to the surface. Thus, surface soil is the exposure medium of chief concern for both human and ecological receptors. Therefore, all soil samples for this study were collected at 0-2 inches in depth.

Sample Collection and Storage

Samples were collected using a stainless steel trowel. A ruler was used to ensure that the actual depth to which soil was collected was within ½ inch of the target (i.e., a bottom depth of no less than 1.5 inches and no greater than 2.5 inches). The soil was placed directly into a clean 16-oz amber glass jar with a teflon-lined lid, and these bottles were stored at room temperature in the dark.

2.3 Sample Preparation

All samples collected in the field were submitted under chain-of-custody to Columbia Analytical Services (CAS) for sample preparation. The first step in sample preparation was compositing of the individual sub-samples. This was achieved by removing equal portions (generally 20 g) of each of the five grab samples and placing these into a stainless steel mixing bowl. The combined samples were thoroughly mixed and placed into a new amber sample bottle. The remainder of each sub-sample was

retained and stored in case there was a need to analyze any of the individual sub-samples separately.

Following compositing, each sample was air dried to constant weight, followed by coarse-sieving through a #10 (2 mm) stainless steel screen. The fraction passing the screen is referred to as the "bulk" fraction. Approximately 100 g of the bulk sample was placed in a clean amber glass jar and stored for future used. The remainder of the bulk sample was further sieved through a 60-mesh (250 um) sieve in order to isolate soil particles less than 250 um in diameter. This fraction (referred to as the "fine" fraction) was isolated because it is believed that fine soil particles are more likely to be ingested by hand to mouth contact that coarse particles, and hence it is concluded that this soil fraction is the most relevant for evaluating human health risk. All of the fine material passing the 250 um sieve was placed in a clean amber glass bottle for analysis and storage.

2.4 Sample Analysis

Following sample preparation as described above, samples were submitted under chain of custody to Midwest Research Institute (MRI) for chemical analysis. Analysis of dioxins in soil samples requires a sophisticated extraction and clean-up procedure. This procedure is detailed in USEPA (1999c) Standard Operating Procedure 11. In brief, the congeners are determined using isotope dilution method via high resolution gas chromatography/mass spectrometry (HRGC/HRMS). Samples are fortified with ^{13}C-labeled PCDD/PCDF/PCB isomers and extracted with an organic solvent. Before cleanup of the extract, the analytes are exchanged into hexane and fortified with ^{37}Cl-labeled *2,3,7,8*-tetrachlorodibenzo-*p*-dioxin. Finally, the extract is sequentially partitioned against concentrated acid and base solutions.

The Method Detection Limit (MDL) for dioxins/furans by this analytical method is defined as a signal that is 2.5 times the average signal noise. An estimate of the average signal noise is available for each analyte in each samples, so the MDL varies from sample to sample and from analyte to analyte. The Method Quantitation Limit (MQL) is based on the lowest calibration standard used and is defined as a signal that is 10-times the average signal noise. Because the noise level varies from sample to sample and analyte to analyte, DLs and QLs also vary from sample to sample and from congener to congener.

2.5 Quality Assurance

A number of steps were taken to obtain data that would allow an assessment of the accuracy and reliability of the data collected. Key elements of the Quality Assurance program are summarized below.

Performance Evaluation Samples

Performance Evaluation (PE) samples are samples of soil that contain know quantities of analyte and that are submitted blind to the analytical laboratory. In this study, three different PE samples were used. These were obtained from EPA's Quality Assurance Technical Support (QATS) laboratory . Nominal values (ppt as TEQ in bulk soil, based on PCDD/PCDF congeners only) are listed below:

Description	**Nominal Value (ppt TEQ in bulk soil)**
Native western soil	< 2
Low standard	35
Medium standard	59

One aliquot of each these three QATS PE samples was submitted to the laboratory along with each set of 14 field samples. In some cases the sample was submitted un-sieved (bulk), and in other cases the samples was sieved, and only the fine fraction was analyzed.

Field Splits and Duplicates

A field duplicate is a second sample of soil collected at the same location as the first sample was collected, by alternating scoops of soil that was placed into the sample jar and into the duplicate jar. A sample split is a specimen that is generated by dividing a single field sample into two parts; in this case, a second aliquot from four total aliquots of sieved soil was submitted from the EPA archiving laboratory in Golden, CO, to the analytical laboratory. Both field duplicate and laboratory split samples were given unique and random identifying labels, so as to be blind to the laboratory analysts. Analysis of these types of samples provided data on the variability within and between related samples. One sample of each type was submitted to the laboratory with each set of about 14 field samples.

Laboratory Quality Control Samples

Laboratory QA samples are samples prepared and run by the laboratory in a non-blind fashion to monitor the performance of the analytical method. Laboratory QA samples included **Method Blanks** (analyte-free soil), **Laboratory Control Samples** (similar to PE samples, but the identity and true concentration are known to the laboratory), and **Method Duplicates** (investigative samples that are split prior to sample preparation at the analytical laboratory).

Data Validation/Verification

All data from MRI were subjected to a data verification check that was performed by RMA contractors (see SOP 12 in the Project Plan). No significant problems were detected in this verification check.

Following verification, all data values were reviewed by EPA to assign data usability flags. **Table 3** summarizes the data quality flags codes that were used, along with a description of the effect of the flag on the data usability assessment. In accord with USEPA (1992) data usability guidelines (Data Usability for Risk Assessment in Superfund), these flags are used for producing two data sets:

1) a semi-quantitative set of results with a value (actual or proxy as per above flags) for each congener; this result is referred to in this report as the "**Full**" TEQ value

2) a quantitative data set with more certain quantitative values (actual or proxy as per above flags) for only the congeners that have no disqualifying flags (D, JN, R and LT); this result is referred to in this report as the "**Quantitative**" TEQ value.

This distinction is made to help evaluate the effects of estimated values on TEQs and to evaluate profiles.

3.0 RESULTS

Detailed analytical results for each field sample are presented in **Appendix A1**, and detailed results for each QA sample run as part of this study are presented in **Appendix A2**. Graphical representations are presented in **Appendix B**. The results are summarized below.

3.1 TEQ Values

Table 4 presents the results (expressed as ppt of TEQ) for each of the 12 composites samples collected from the South Plants area and for each of the 10 purposeful samples collected from the historic use areas at RMA..

For the samples collected from the South Plants area, Full TEQ values ranged from 3 to 101 ppt, while Quantitative TEQ values ranged from 2 to 91 ppt. The average ratio of Full TEQ to Quantitative TEQ was about 1.25. This indicates that congeners that are present below the quantitation limit contribute an average of about 25% to the estimated TEQ.

The spatial pattern of the full TEQ values for TCDDs/TCDFs (i.e., not including the contribution of PCBs) for samples from South Plants is shown in **Figure 2**. As seen, the highest values (20-94 ppt) occur in the center of the South Plants area, with concentrations of 2-6 ppt in the perimeter grids. This spatial pattern is consistent with the hypothesis that low levels of dioxins were formed and released to soil

during historic operations at the South Plants area, but that the contamination is largely restricted to the manufacturing area, and rapidly decreases as a function of distance from the historic source.

For the 10 purposeful samples collected from the different historic use areas of RMA, full TEQ values based on all 29 congeners ranged from 2 to 49 ppt, while Quantitative TEQ values ranged from 1 to 47 ppt. The average ratio of Full to Quantitative was about 1.21. This indicates that congeners that are present below the quantitation limit contribute an average of about 21% to the estimated full TEQ.

The spatial pattern of the full TEQ values for TCDDs/TCDFs (i.e., not including the contribution of PCBs) for the purposeful samples from the historic use areas of RMA is shown in **Figure 3**. As seen, the highest values (10-14 ppt) occur at Stations P-3, P-4, P-5 and P-6, which are associated with the following:

Sample P-3 is located in secondary Basin D in Section 26. This sample is composed of soils impacted by the disposal of liquid wastes from the RMA production areas.

Sample P-4 is located just east of the North Plants production facility. This sample is composed of soils potentially impacted by the incineration operations in North Plants.

Sample P-5 is located within the North Plants production facility. This sample is composed of soils potentially impacted by GB operations within North Plants as well as the incineration operations in North Plants.

Sample P-6 is located in the Toxic Storage Yard (TSY) in Section 31. This sample is composed of soils potentially impacted by spills of various materials stored in the TSY

Full TEQ concentrations at the other sampling stations range from 1-6 ppt. These results are consistent with the hypothesis that dioxins were released to some soil locations during historic operations at RMA, but that the magnitude of the contamination is low.

3.2 Contribution of PCBs

The TEQ values presented in the right hand section of Table 4 are based on the sum of TEQ values across 17 dioxin/furan congeners and 12 dioxin-like PCBs. For the 12 samples from the South Plants area, the contribution of PCDDs and PCDFs to the TEQ is approximately 80-83%, with about 17-20% contributed by PCBs. For the 10 purposeful samples from the historic use areas, the contribution of PCBs is somewhat higher (about 33-34% on average). This is due mainly to sample P-5 which contains a substantially higher level of PCBs (about 37 ppt TEQ) than most other samples, which are generally less than 5 ppt TEQ.

3.3 Contribution of Specific Congeners

The congener composition of a soil sample may provide useful information about the source of the material, and helps to reveal which specific congeners are contributing the majority of the TEQ levels. The mean contribution of each congener to full TEQ is summarized in **Table 5**. In both the South Plants area and the historic use areas, most of the TEQ (full and/or quantitative) is contributed by pentachloro- and hexachloro-dioxins and furans, with an additional contribution from 1,2,3,4,6,7,8-HpCDD and from PCB-126. TCDD itself usually contributes only about 1-3% of the total.

3.4 Quality Assurance Samples

Quality assurance samples analyzed as part of this study indicate that the data are reliable and accurate.

Method Blanks

Full TEQ values for 2 method blanks were 0.8 and 0.2 ppt (average = 0.5 ppt). This indicates that there is no significant source in dioxin or PCB contamination within the laboratory.

Splits and Duplicates

Results for duplicates and splits are as follows:

Sample	Full	Quantitative
SP-4 SP-4 Dup	6.0 5.2	4.9 4.3
SP-8 SP-8 Split	33.9 30.2	29.5 26.1
P-5 P-5 Split	48.8 48.6	47.4 46.1

As seen, there is good agreement between splits and duplicate pairs, with an average difference of less than 2 ppt.

Blind Performance Evaluation Samples

Analytical results for the soil standards (PE samples) obtained from QATS are summarized below.

Sample	Full TEQ (ppt) (PCDD/PCDF Only)			
	Bulk		Sieved	
	Nominal	Measured	Nominal	Measured
Clean Soil	< 2		--	1.9 (N=1)
Low Standard	35	26 (N=1)	--	72 (N=1)
Medium Standard	59	77 (N=1)	--	125 (N=1)

As seen, measured values for bulk PE samples are in reasonable accord with the expected (nominal) values. For PE samples that were sieved before analysis, the measured values are about twice as high as the nominal values for the bulk PE samples. This indicates that dioxins and furans tend to be more concentrated (on a mass per unit mass basis) in fine particles than in bulk soil, as would be expected for a material that adheres to the surface of particles, since the surface area to mass ratio increases as particle size decreases.

Laboratory Spikes

Analytical recovery of congeners from 2 different laboratory spikes (nominal full TEQ = 252 ppt) were 100% and 99%, respectively.

4.0 DISCUSSION

Comparison to Human-Health Based Guidelines

One of the objectives of this study was to determine whether dioxin levels in on-site soils might be of health concern to on-site workers. The concentration in soil that is identified by USEPA as the potential level of concern for workers is 5,000-20,000 ppt (EBASCO 1994). Inspection of Table 4 reveals that all of the samples collected in this study, including the most heavily impacted samples from the South Plants area and other historic use areas, are all far below the level of potential health concern to workers. This is shown graphically in **Figure 4**.

Comparison to Area-Wide Background Levels

Figure 5 compares the distribution of concentration values observed at historic use areas of RMA with values observed at sampling locations around the Denver front range area (USEPA 2000c). As seen, the concentration values at RMA historic use areas and at South Plants are somewhat higher than for open space or agricultural areas, but tend to overlap the range of values measured at commercial and industrial areas located in the Denver front range area. Multiple pair-wise comparisons using the

Mann-Whitney rank sum test indicate that neither of the on-post data sets (South Plants, purposeful) are statistically different from the off-post data sets for commercial or industrial areas in the Denver front range area, but are different from (higher than) the open space and agricultural area data sets ($p < 0.05$).

It should also be noted that the areas of RMA with the highest dioxin levels are currently undergoing soil remediation due to the presence of organo-chlorine pesticide (OCP) contamination. Once this remediation is complete, it is expected that dioxin levels on the RMA will be approximately the same as for open space areas in the Denver front range area.

5.0 SUMMARY AND CONCLUSIONS

Using perimeter areas of the RMA as a frame of reference, the concentration of dioxins (including both PCDD/PCDF and PCB congeners) is slightly elevated in samples of soil collected from areas historically used for chemical manufacturing operations (South Plants) or waste disposal. The spatial pattern of contamination does not suggest that any significant off-site releases have occurred, and even the highest on-site levels are far below a level of health concern to on-site workers. Concentration levels tend to overlap those found at other industrial and commercial areas around the Denver front range area.

REFERENCES

EBASCO. 1994. Final Integrated Endangerment Assessment/ Risk Characterization (IEA/RC). Version 4.2. July 1994.

Gannett Fleming. 1999. Review of Former Sampling Programs at Rocky Mountain Arsenal, Colorado. Memo from Karen Prochnow, Gannett Fleming, Inc., to Laura Williams, USEPA. March 19, 1999.

USEPA. 1991. Risk Assessment Guidance for Superfund. Volume I. Human Health Evaluation Manual (Part A). EPA/540/1-89/002.

USEPA. 1994a. Health Assessment Document for 2,3,7,8-Tetrachlorodibenzo-*p*-dioxin (TCDD) and Related Compounds. Volume III of III. Office of Health and Environmental Assessment Office of Research and Development. External Review Draft. August 1994. EPA/600/BP-92/001c.

USEPA. 1994b. Guidance for the Data Quality Objectives Process. USEPA Office of Research and Development. EPA QA/G-4. EPA/600/R-96/055.

USEPA. 1998a. Approach for Addressing Dioxins in Soil at CERCLA and RCRA Sites. OSWER Directive 9200.4-26. Memo from Timothy Fields Jr. April 13, 1998.

USEPA. 1998b. The Inventory of Sources of Dioxin in the United States. Review Draft. USEPA Office of Research and Development. EPA/600/P-98/002Aa. April 1998.

USEPA. 1998c. Guidance for Data Quality Assessment. USEPA Office of Research and Development, EPA QA/G-9. EPA/600/R-96/084.

USEPA. 1999a. Requirements for Quality Assurance Project Plans for Environmental Data Operations. Draft Interim Final. USEPA Quality Assurance Management Staff. QA/R-5.

USEPA. 1999b. Project Plan for Confirmation Soil Sampling at the Western Tier Parcel, Rocky Mountain Arsenal, Commerce City, Co. Prepared for USEPA Region 8 by ISSI Consulting Group, Inc. July, 1999.

USEPA. 2000a. Evaluation of Potential Human Health Risk from Dioxins, Furans and PCBs in Soil at the Western Tier Parcel of the Rocky Mountain Arsenal. Report prepared for USEPA Region 8 by ISSI Consulting Group with assistance from Gannett Fleming, Inc. May, 2000.

USEPA. 2000b. Characterization of Dioxins, Furans and PCBs In Random Soil Samples Collected from the Rocky Mountain Arsenal. Report prepared for USEPA Region 8 with assistance from Gannett Fleming, Inc. October, 2000.

USEPA. 2000c. Characterization of Dioxins, Furans and PCBs In Soil Samples Collected from the Denver Front Range Area. Report prepared for USEPA Region 8 with assistance from Gannett Fleming, Inc. October, 2000.

Van den Berg M, Bimbaum L, Bosveld ATC, Brunström B, Cook P, Feeley M, Giesy JP, Hanberg A, Hasegawa R, Kennedy SW, Kubiak T, Larsen JC, van Leeuwen FXR, Liem AKD, Nolt C, Peterson RE, Poellinger L, Safe S, Schrenk D, Tillitt D, Tysklind M, Younes M, Wærn F, Zacharewski T. 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife. Environmental Health Perspectives 106:775-792.

Table 1. List of Analytes and TEFs

Class	Target Analyte	TEF		
		Mammals	Birds	Fish
Dibenzo-p-dioxins (PCDDs)	2,3,7,8-TCDD	1	1	1
	1,2,3,7,8-PeCDD	1	1	1
	1,2,3,4,7,8-HxCDD	0.1	0.05	0.5
	1,2,3,6,7,8-HxCDD	0.1	0.01	0.01
	1,2,3,7,8,9-HxCDD	0.1	0.1	0.01
	1,2,3,4,6,7,8-HpCDD	0.01	< 0.001	0.001
	OCDD	0.0001	0.0001	<0.0001
Dibenzofurans (PCDFs)	2,3,7,8-TCDF	0.1	1	0.05
	1,2,3,7,8-PeCDF	0.05	0.1	0.05
	2,3,4,7,8-PeCDF	0.5	1	0.5
	1,2,3,4,7,8-HxCDF	0.1	0.1	0.1
	1,2,3,6,7,8-HxCDF	0.1	0.1	0.1
	1,2,3,7,8,9-HxCDF	0.1	0.1	0.1
	2,3,4,6,7,8-HxCDF	0.1	0.1	0.1
	1,2,3,4,6,7,8-HpCDF	0.01	0.01	0.01
	1,2,3,4,7,8,9-HpCDF	0.01	0.01	0.01
	OCDF	0.0001	0.0001	<0.0001
PCBs	3,3',4,4'-TCB (77)	0.0001	0.1	0.0005
	3,4,4',5-TCB (81)	0.0001	0.05	0.0001
	3,3',4,4'-5-PeCB (126)	0.1	0.1	0.005
	3,3',4,4',5,5'-HxCB (169)	0.01	0.001	0.00005
	2,3,3',4,4'-PeCB (105)	0.0001	0.0001	< 0.000005
	2,3,4,4',5-PeCB (114)	0.0005	0.0001	< 0.000005
	2,3',4,4',5-PeCB (118)	0.0001	0.00001	< 0.000005
	2',3,4,4',5-PeCB (123)	0.0001	0.00001	< 0.000005
	2,3,3',4,4',5-HxB (156)	0.0005	0.0001	< 0.000005
	2,3,3',4,4',5'-HxCB (157)	0.0005	0.0001	< 0.000005
	2,3',4,4',5,5'-HxCB (167)	0.00001	0.00001	< 0.000005
	2,3,3',4,4',5,5'-HpCB (189)	0.0001	0.00001	< 0.000005

TEF = Toxicity Equivalency Factor
TEF values are consensus estimates recommended by WHO (Van den Berg et al. 1998)

Table 2. RMA Purposeful Sample Locations and Descriptions

Sample #	Location/Description
P1	Sample P1 is located just east of the southeast corner of former Basin F in the Basin F Exterior Soils. This sample will evaluate soils that have been impacted by the windblown distribution of Basin F liquids from the spray evaporation system.
P2	Sample P2 is located in the south central portion of Section 20 in the ash disposal area. This sample will evaluate soils/ash where incinerator and electrostatic precipitator ash from Mustard demilitarization operations were disposed.
P3	Sample P3 is located in secondary Basin D in Section 26. This sample will evaluate soils impacted by the disposal of liquid wastes from the RMA production areas.
P4	Sample P4 is located just east of the North Plants production facility. This sample will evaluate soils potentially impacted by the incineration operations in North Plants.
P5	Sample P5 is located within the North Plants production facility. This sample will evaluate soils potentially impacted by GB operations within North Plants as well as the incineration operations in North Plants.
P6	Sample P6 is located in the Toxic Storage Yard (TSY) in Section 31. This sample will evaluate soils potentially impacted by spills of various materials stored in the TSY.
P7	Sample P7 is located in former burn pits and burial trenches located in Section 32. This sample will evaluate soils impacted by the pits and trenches.
P8	Sample P8 is located just southwest of the trash incinerator in Section 36. This sample will evaluate soils potentially impacted by emissions from the trash incinerator.
P9	Sample P9 is located east of the Complex/Army Trenches in Section 36. This sample will evaluate soils potentially impacted by windblown dispersion of waste and emissions from disposal and burning conducted in the trenches.
P10	Sample P10 is located near the USFWS Visitor Center in Section 2. This sample will evaluate soils in areas which are frequently visited by the public.

(Provided by CDPHE, M. Kadnuck, 12/99)

Table 3. Definition, Application, and Uses of Data Flags

Validation Flags	Meaning of Flags for Dioxin Analyses in Soils and Tissues by the MRI Lab	* Usability of DataSets	
		Full data set used (*semi-quantitative*)	**Quantitative** (qualified sub-set used)
E	**E**stimated Maximum Potential Concentration; the relative ion abundance ratios did not meet the acceptance limits.	use value	use ½ value
D	EMPC is caused by polychlorinated **D**iphenyl ether interference.	use ½ value	don't use
B	Analyte was detected in associated Method **B**lank, sample concentration <5x MB concentration.	use value	use ½ value
C	Concentration is above upper **C**alibration Standard; result is an estimate, flagged C by lab and J added by validator.	use value	use value
I	Recovery of 13C-labeled **I**sotopic analyte outside of criteria	use value	use value
J	Estimated: e.g., isotopic standard is outside CCAL range, native analyte recovery in LCS is outside criteria, etc.	use value	use ½ value
NJ	Presumptive evidence for the presence of an analyte with an estimated value; if used for 2378-TCDF, see "U" below.	use ½ value	don't use
S	Peak is **S**aturated; result, if calculated, is flagged by the validator as an estimate - "J".	use value	use value
U	**U**nconfirmed: column is not specific for 2,3,7,8-TCDF; confirmation not requested. Validator now uses "NJ" flag.	use value	use ½ value
R	**R**ejected: result is invalid and not usable.	use ½ EDL	don't use
***use of MRI Laboratory's reported "LT" (less than) values* <MQL (10 x Signal:Noise)**			
LT *applied **first** to data, then apply flags!*	"LT" is not a true "flag", but if a LT result is a "**detect**" **above the MDL** (2.5 x Signal:Noise = lab EDL), then	use value	use ½ value
	"LT" is not a true "flag", but if a LT result is a "**non-detect**" **below the MDL** (2.5 x Signal:Noise = lab EDL), then	use ½ EDL	don't use

* Per concepts in the 1992 EPA Data Usability for Risk Assessment in Superfund guidance, the above flags are to be used for producing two data-sets: 1) a "**Full**" set of semi-quantitative results with an **actual or proxy value for each of the 29 measured congeners**; and 2) a "**Quantitative**" partial set of results with more certain identification and more accurate quantities of congeners which have **no disqualifying flags (D, JN, R or LT) or use limited proxies (E, B, J or U)**. This distinction is made to better understand and limit the artifactual impacts of the less certain estimated values on TEQs, analyzing this sensitivity by comparing TEQs from these two data-sets and evaluating congener profiles with only the analytes that are able to be quantitated.

Source: EPA R8 Soil and RMA Tissue Studies of Dioxins, 2000, ref. RMA/EAL SOP 803

Table 4. Soil TEQ Values for Historic Use Areas at RMA

Location	Sample	Dioxins/Furans Only		PCBs Only		Total	
		Full	Quantitative	Full	Quantitative	Full	Quantitative
South Plants	SP-1	4.4	2.7	1.2	1.1	5.6	3.8
	SP-2	20.4	17.3	1.7	1.6	22.1	18.9
	SP-3	29.3	26.4	3.6	3.4	32.9	29.8
	SP-4	5.5	4.3	0.6	0.5	6.0	4.9
	SP-5	1.8	1.1	0.9	0.8	2.7	1.9
	SP-6	10.5	9.2	3.6	3.4	14.1	12.6
	SP-7	93.6	84.1	7.3	6.9	100.9	91.0
	SP-8	31.2	26.9	2.7	2.5	33.9	29.5
	SP-9	3.3	2.6	0.6	0.3	3.9	2.9
	SP-10	2.9	2.2	0.4	0.4	3.3	2.6
	SP-11	2.1	1.4	0.9	0.9	3.0	2.3
	SP-12	3.0	2.3	0.6	0.6	3.7	2.9
Purposeful	P-1	3.6	2.1	1.7	1.7	5.4	3.7
	P-2	1.2	0.7	0.3	0.1	1.4	0.8
	P-3	13.5	12.3	3.2	3.1	16.8	15.3
	P-4	12.5	12.0	2.9	2.8	15.4	14.8
	P-5	11.4	10.6	37.5	36.7	48.8	47.4
	P-6	9.6	9.4	0.9	0.8	10.5	10.3
	P-7	1.6	1.2	0.3	0.2	1.9	1.3
	P-8	3.6	3.3	2.3	2.2	5.9	5.5
	P-9	5.5	4.7	1.8	1.7	7.3	6.4
	P-10	2.0	1.5	4.7	4.4	6.7	5.9

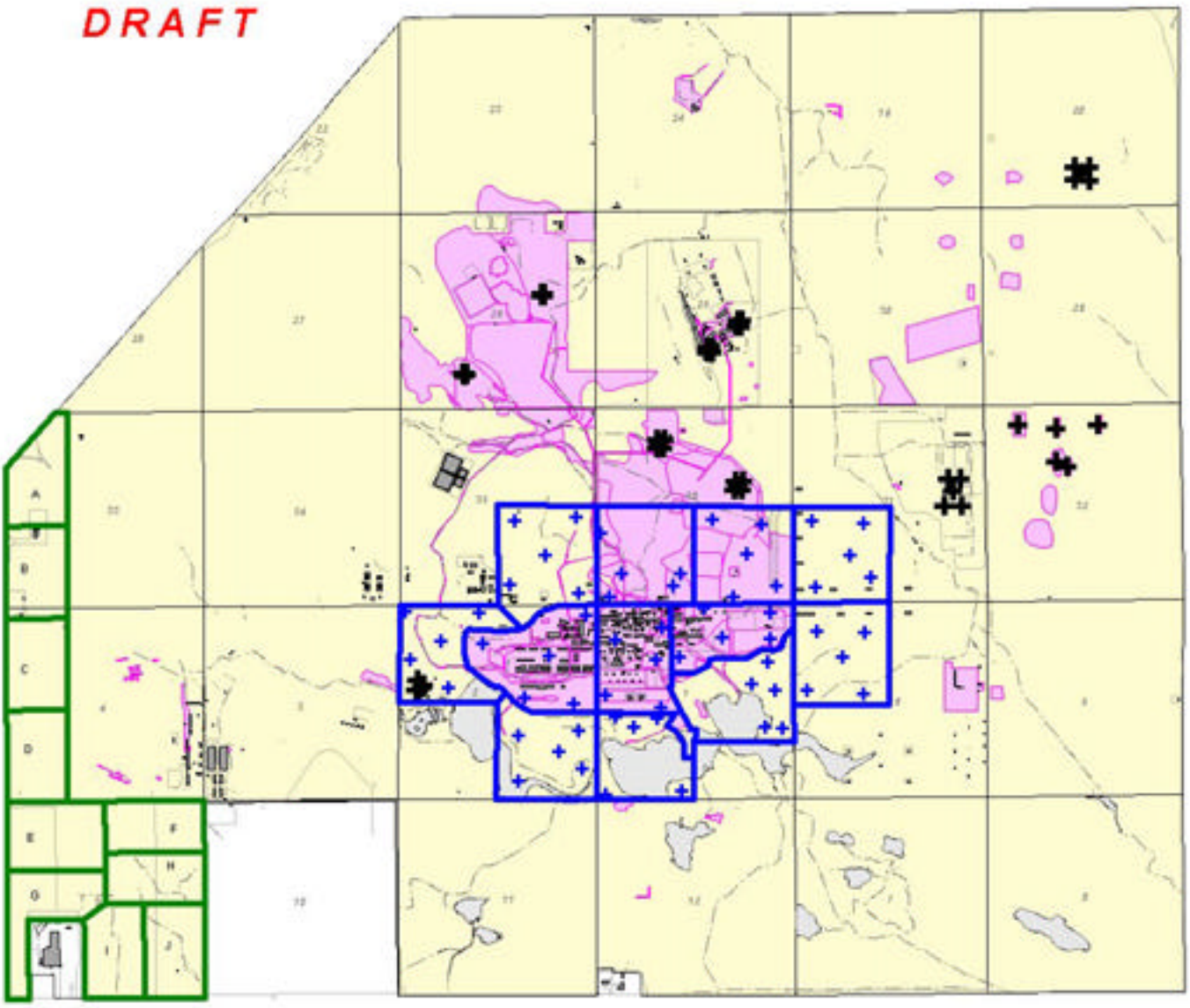
All TEQ values are expressed in units of ppt

Table 5. Average Contribution of Congeners to TEQ

Analyte	Mean Contribution to TEQ (%)			
	Purposeful Samples		South Plants Samples	
	Full	Quantitative	Full	Quantitative
2,3,7,8-TCDF	1.4%	0.0%	1.1%	0.0%
2,3,7,8-TCDD	2.5%	0.8%	3.3%	1.3%
1,2,3,7,8-PeCDF	2.1%	2.2%	5.7%	6.9%
2,3,4,7,8-PeCDF	11.0%	10.5%	12.0%	13.6%
1,2,3,7,8-PeCDD	13.0%	12.6%	7.4%	2.2%
1,2,3,4,7,8-HxCDF	7.7%	9.3%	20.6%	25.2%
1,2,3,6,7,8-HxCDF	4.7%	5.4%	11.3%	13.5%
2,3,4,6,7,8-HxCDF	3.5%	2.8%	5.4%	3.6%
1,2,3,7,8,9-HxCDF	2.1%	0.8%	5.0%	2.8%
1,2,3,4,7,8-HxCDD	1.6%	1.4%	1.1%	1.0%
1,2,3,6,7,8-HxCDD	3.3%	3.9%	1.7%	1.8%
1,2,3,7,8,9-HxCDD	2.8%	3.3%	1.4%	0.7%
1,2,3,4,6,7,8-HpCDF	3.0%	3.2%	1.3%	0.0%
1,2,3,4,7,8,9-HpCDF	0.8%	0.8%	2.3%	2.8%
1,2,3,4,6,7,8-HpCDD	7.1%	8.3%	3.4%	4.4%
OCDF	0.2%	0.2%	0.4%	0.4%
OCDD	0.5%	0.6%	0.3%	0.3%
PCB-81	0.0%	0.0%	0.0%	0.0%
PCB-77	0.2%	0.2%	0.1%	0.1%
PCB-123	0.1%	0.0%	0.0%	0.0%
PCB-118	1.7%	1.0%	1.2%	0.8%
PCB-114	0.2%	0.2%	0.2%	0.1%
PCB-105	1.1%	0.6%	0.6%	0.6%
PCB-126	26.6%	28.8%	13.1%	16.3%
PCB-167	0.0%	0.0%	0.0%	0.0%
PCB-156	2.0%	2.1%	1.0%	1.2%
PCB-157	0.5%	0.5%	0.2%	0.3%
PCB-169	0.2%	0.2%	0.2%	0.1%
PCB-189	0.0%	0.0%	0.0%	0.0%
Dioxins/Furans	67.4%	66.2%	83.4%	80.5%
PCBs	32.6%	33.8%	16.6%	19.5%
All	100.0%	100.0%	100.0%	100.0%

Cells greater than 5% have been shaded to highlight the main contributors

Draft Results of Dioxins (TEQ, ppt) in Soils at RMA



South Plants Study Area

Western Tier Parcel Study Area

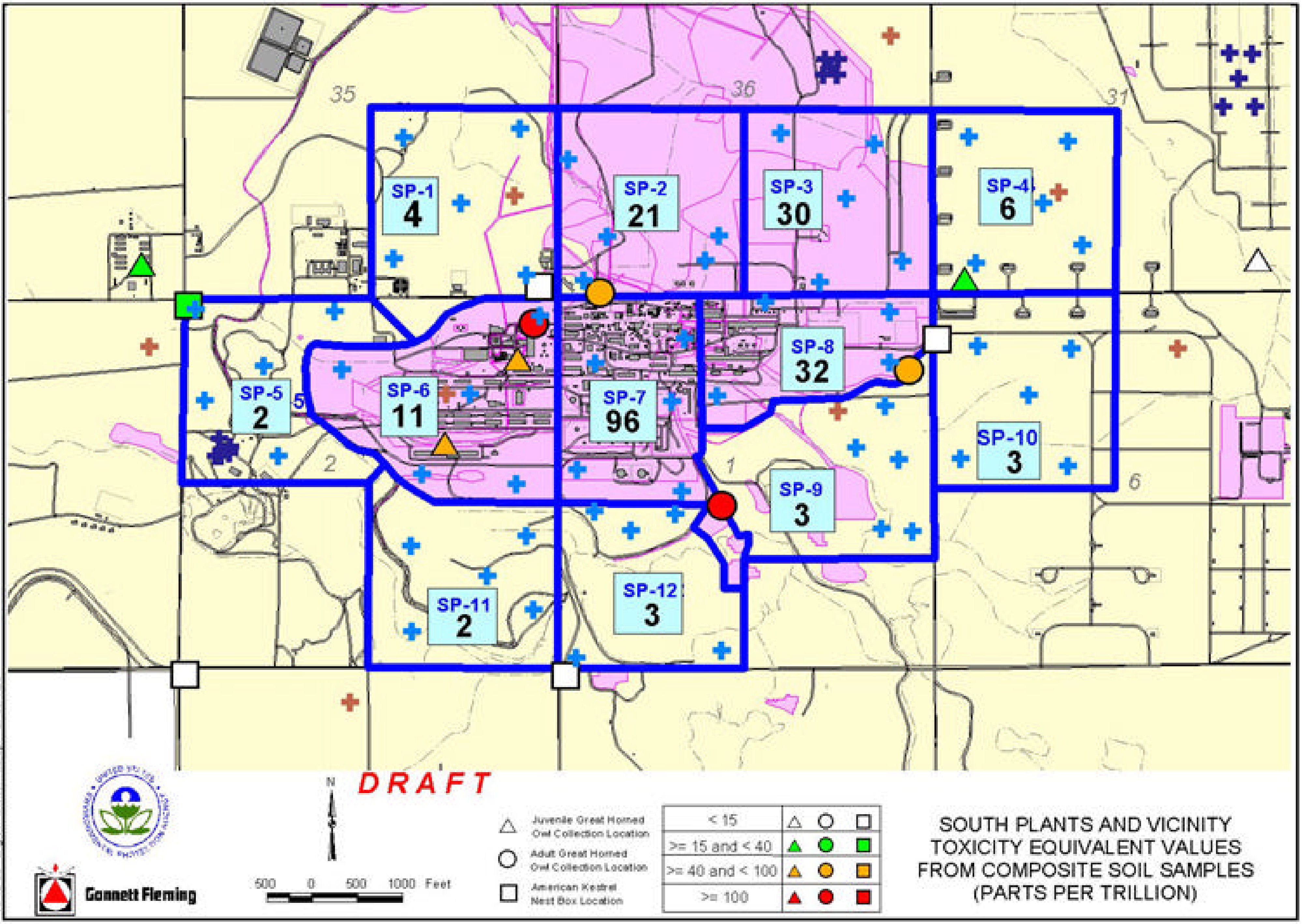
Historic Use Sample Sites

N

2000 0 2000 4000 Feet

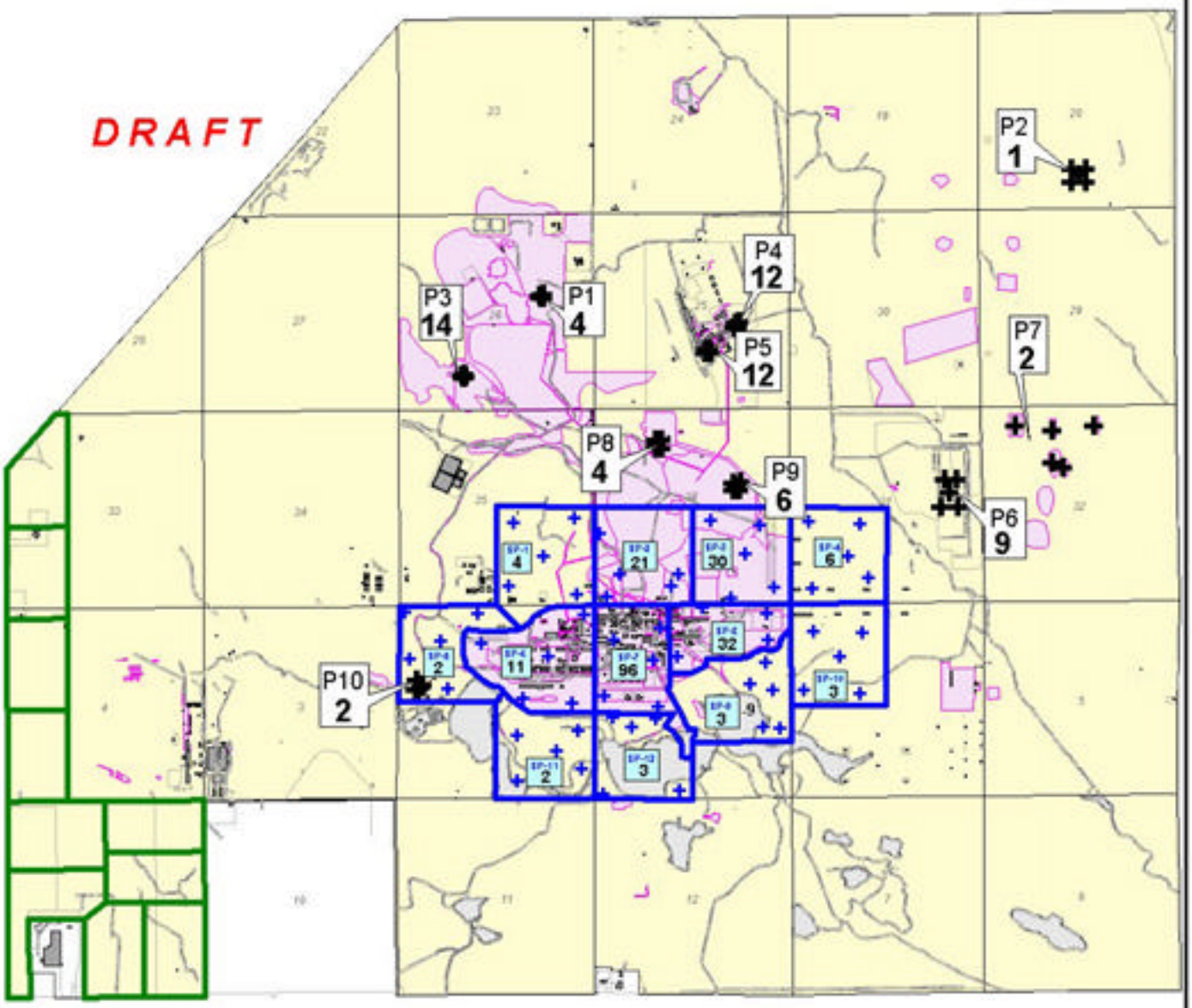
Gannett Fleming

ROCKY MOUNTAIN ARSENAL
SOUTH PLANTS AND CDPHE
SAMPLE LOCATIONS



SOUTH PLANTS AND VICINITY
TOXICITY EQUIVALENT VALUES
FROM COMPOSITE SOIL SAMPLES
(PARTS PER TRILLION)

Draft Results of Dioxins (TEQ, ppt) in Soils at RMA



South Plants Study Area

Western Tier Parcel Study Area

P1 1 Historic Use Sample Sites

1 Random Grab Sample Sites

N

2000 0 2000 4000 Feet

Gannett Fleming

ROCKY MOUNTAIN ARSENAL
TOXICITY EQUIVALENT VALUES (ppt)
FROM COMPOSITE SOIL SAMPLES

10-27-00 c:\gis\mxd\dioxrma2.apr StateSoilTEQ

Figure 4. Summary of Results

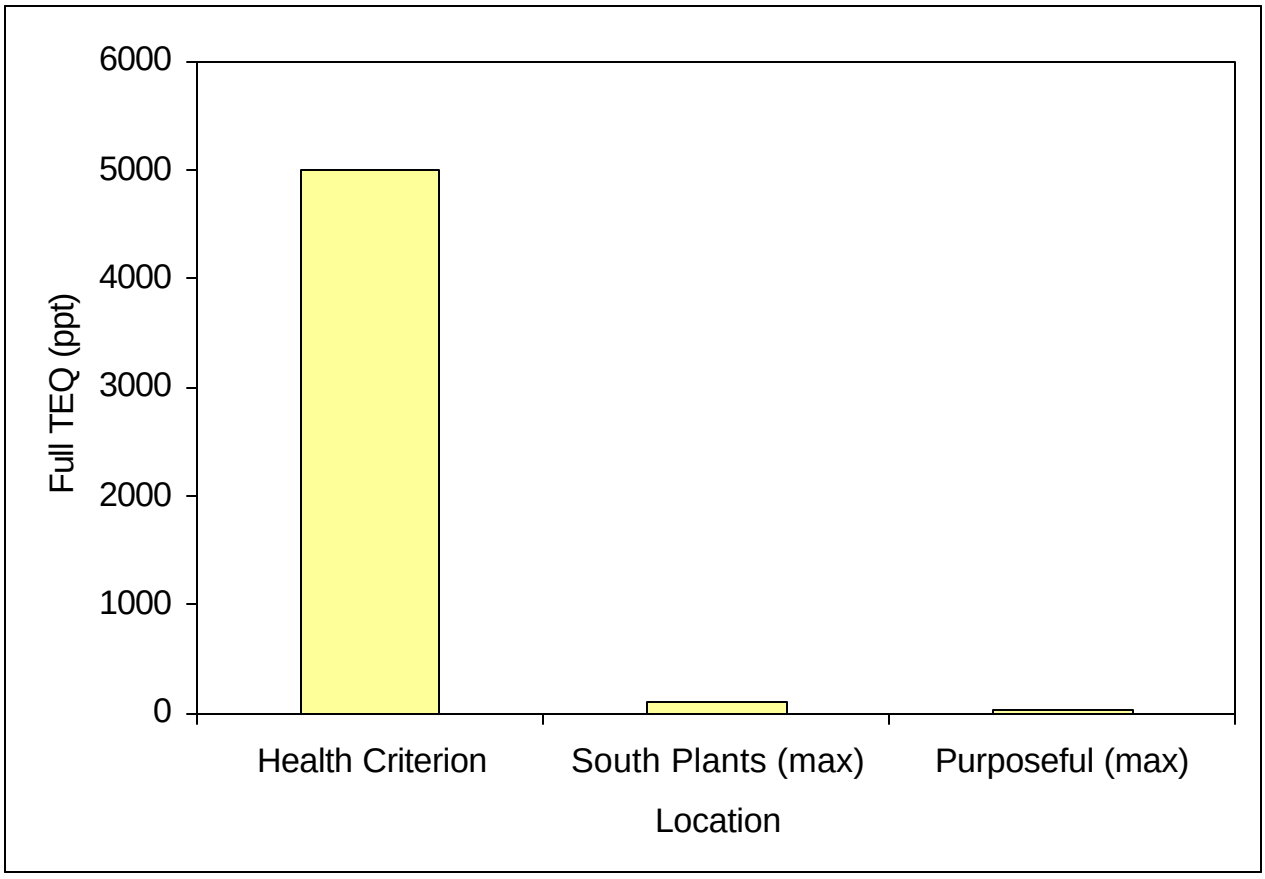
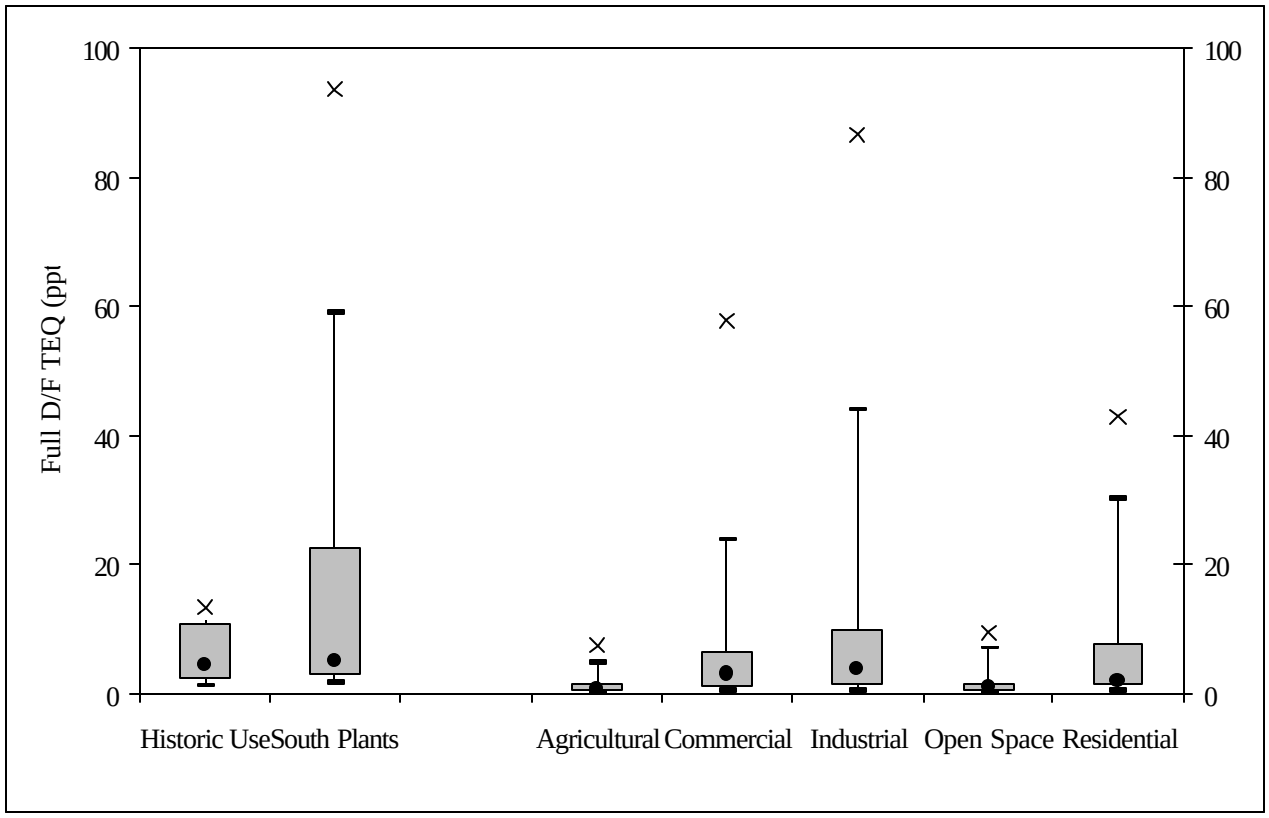


Figure 5. Comparison of Dioxin Levels in RMA Historic Use Areas with Denver Front Range Area Soils



Values shown are based on dioxins and furans only (PCBs are not included)

APPENDIX A

RAW ANALYTICAL DATA AND CALCULATION OF TEQ VALUES

Sample ID **105** ***Field*** **P-1**

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.252	1.008	0.885	NJ		0.4425	0	0.1	0.0	0.0	0.8%	0.0%
2,3,7,8-TCDD	0.283	1.132		--		0.1415		1	0.1	0.0	2.6%	0.0%
1,2,3,7,8-PeCDF	0.448	1.792	2.39	--		2.39	2.39	0.05	0.1	0.1	2.2%	3.2%
2,3,4,7,8-PeCDF	0.408	1.632	1.28	--		1.28	0.64	0.5	0.6	0.3	11.9%	8.6%
1,2,3,7,8-PeCDD	1.28	5.12		E		0.64		1	0.6	0.0	11.9%	0.0%
1,2,3,4,7,8-HxCDF	0.744	2.976	4.69	--		4.69	4.69	0.1	0.5	0.5	8.7%	12.6%
1,2,3,6,7,8-HxCDF	0.675	2.7	3.43	--		3.43	3.43	0.1	0.3	0.3	6.4%	9.2%
2,3,4,6,7,8-HxCDF	0.887	3.548	1.98	--		1.98	0.99	0.1	0.2	0.1	3.7%	2.7%
1,2,3,7,8,9-HxCDF	1.23	4.92	1.45	B	<5*B	1.45	0.3625	0.1	0.1	0.0	2.7%	1.0%
1,2,3,4,7,8-HxCDD	0.569	2.276	0.789	--		0.789	0.3945	0.1	0.1	0.0	1.5%	1.1%
1,2,3,6,7,8-HxCDD	0.483	1.932	1.3	--		1.3	0.65	0.1	0.1	0.1	2.4%	1.7%
1,2,3,7,8,9-HxCDD	0.485	1.94	1.02	--		1.02	0.51	0.1	0.1	0.1	1.9%	1.4%
1,2,3,4,6,7,8-HpCDF	19.3	77.2		D		4.825		0.01	0.0	0.0	0.9%	0.0%
1,2,3,4,7,8,9-HpCDF	1.2	4.8	6.36	--		6.36	6.36	0.01	0.1	0.1	1.2%	1.7%
1,2,3,4,6,7,8-HpCDD	0.446	1.784	41.8	--		41.8	41.8	0.01	0.4	0.4	7.8%	11.2%
OCDF	0.23	0.92	142	--		142	142	0.0001	0.0	0.0	0.3%	0.4%
OCDD	0.25	1	299	--		299	299	0.0001	0.0	0.0	0.6%	0.8%
PCB-81	1.12	4.48	6.47	J		6.47	3.235	0.0001	0.0	0.0	0.0%	0.0%
PCB-77	1.02	4.08	166	--		166	166	0.0001	0.0	0.0	0.3%	0.4%
PCB-123	54	216		E		27		0.0001	0.0	0.0	0.1%	0.0%
PCB-118	2.56	10.24	1100	CJ		1100	550	0.0001	0.1	0.1	2.0%	1.5%
PCB-114	2.88	11.52		--	<5*B	1.44		0.0005	0.0	0.0	0.0%	0.0%
PCB-105	2.94	11.76	660	CJ		660	330	0.0001	0.1	0.0	1.2%	0.9%
PCB-126	0.459	1.836	14.4	--		14.4	14.4	0.1	1.4	1.4	26.8%	38.7%
PCB-167	0.948	3.792	63.9	--		63.9	63.9	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	1.03	4.12	150	--		150	150	0.0005	0.1	0.1	1.4%	2.0%
PCB-157	1.07	4.28	33.7	--		33.7	33.7	0.0005	0.0	0.0	0.3%	0.5%
PCB-169	0.151	0.604	1.11	--		1.11	1.11	0.01	0.0	0.0	0.2%	0.3%
PCB-189	1.83	7.32	18.8	--		18.8	18.8	0.0001	0.0	0.0	0.0%	0.1%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	3.6	2.1	1.7	1.7	5.4	3.7

Sample ID 157 *Field* P-4

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.399	1.596	5.58	NJ		2.79	0	0.1	0.3	0.0	1.8%	0.0%
2,3,7,8-TCDD	0.233	0.932		E		0.1165		1	0.1	0.0	0.8%	0.0%
1,2,3,7,8-PeCDF	0.145	0.58	6.98	--		6.98	6.98	0.05	0.3	0.3	2.3%	2.4%
2,3,4,7,8-PeCDF	0.132	0.528	4.48	--		4.48	4.48	0.5	2.2	2.2	14.5%	15.2%
1,2,3,7,8-PeCDD	0.0822	0.3288	1.87	--		1.87	1.87	1	1.9	1.9	12.1%	12.7%
1,2,3,4,7,8-HxCDF	0.417	1.668	10	--		10	10	0.1	1.0	1.0	6.5%	6.8%
1,2,3,6,7,8-HxCDF	0.341	1.364	7.81	--		7.81	7.81	0.1	0.8	0.8	5.1%	5.3%
2,3,4,6,7,8-HxCDF	0.429	1.716	8.22	--		8.22	8.22	0.1	0.8	0.8	5.3%	5.6%
1,2,3,7,8,9-HxCDF	0.485	1.94	2.09	B	<5*B	2.09	1.045	0.1	0.2	0.1	1.4%	0.7%
1,2,3,4,7,8-HxCDD	0.165	0.66	3.38	--		3.38	3.38	0.1	0.3	0.3	2.2%	2.3%
1,2,3,6,7,8-HxCDD	0.14	0.56	7.97	--		7.97	7.97	0.1	0.8	0.8	5.2%	5.4%
1,2,3,7,8,9-HxCDD	0.142	0.568	6.72	--		6.72	6.72	0.1	0.7	0.7	4.4%	4.5%
1,2,3,4,6,7,8-HpCDF	0.298	1.192	98.3	--		98.3	98.3	0.01	1.0	1.0	6.4%	6.7%
1,2,3,4,7,8,9-HpCDF	0.539	2.156	10.7	--		10.7	10.7	0.01	0.1	0.1	0.7%	0.7%
1,2,3,4,6,7,8-HpCDD	1.37	5.48	182	--		182	182	0.01	1.8	1.8	11.8%	12.3%
OCDF	0.00818	0.0327	216	--		216	216	0.0001	0.0	0.0	0.1%	0.1%
OCDD	0.0132	0.0528	956	--		956	956	0.0001	0.1	0.1	0.6%	0.6%
PCB-81	0.539	2.156	2.75	J		2.75	1.375	0.0001	0.0	0.0	0.0%	0.0%
PCB-77	0.374	1.496	98.4	--		98.4	98.4	0.0001	0.0	0.0	0.1%	0.1%
PCB-123	7.51	30.04	26.6	--		26.6	13.3	0.0001	0.0	0.0	0.0%	0.0%
PCB-118	6.86	27.44	1430	CJ		1430	715	0.0001	0.1	0.1	0.9%	0.5%
PCB-114	8.45	33.8	30.3	--		30.3	15.15	0.0005	0.0	0.0	0.1%	0.1%
PCB-105	8.63	34.52	710	CJ		710	355	0.0001	0.1	0.0	0.5%	0.2%
PCB-126	1.41	5.64	24.6	--		24.6	24.6	0.1	2.5	2.5	16.0%	16.6%
PCB-167	0.51	2.04	152	--		152	152	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	0.555	2.22	273	--		273	273	0.0005	0.1	0.1	0.9%	0.9%
PCB-157	0.578	2.312	78	--		78	78	0.0005	0.0	0.0	0.3%	0.3%
PCB-169	0.96	3.84	2.83	--		2.83	1.415	0.01	0.0	0.0	0.2%	0.1%
PCB-189	0.594	2.376	37.1	--		37.1	37.1	0.0001	0.0	0.0	0.0%	0.0%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	12.5	12.0	2.9	2.8	15.4	14.8

Sample ID 218 ***Field*** **SP-5**

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.376	1.504	0.444	NJ		0.222	0	0.1	0.0	0.0	0.8%	0.0%
2,3,7,8-TCDD	0.169	0.676		--		0.0845		1	0.1	0.0	3.1%	0.0%
1,2,3,7,8-PeCDF	0.198	0.792	1.02	--		1.02	1.02	0.05	0.1	0.1	1.9%	2.7%
2,3,4,7,8-PeCDF	0.172	0.688	0.507	--		0.507	0.2535	0.5	0.3	0.1	9.4%	6.7%
1,2,3,7,8-PeCDD	0.505	2.02		E	<5*B	0.2525		1	0.3	0.0	9.3%	0.0%
1,2,3,4,7,8-HxCDF	0.458	1.832	2.14	--		2.14	2.14	0.1	0.2	0.2	7.9%	11.3%
1,2,3,6,7,8-HxCDF	0.385	1.54	1.58	B	<5*B	1.58	0.79	0.1	0.2	0.1	5.8%	4.2%
2,3,4,6,7,8-HxCDF	0.518	2.072	1.07	B	<5*B	1.07	0.2675	0.1	0.1	0.0	4.0%	1.4%
1,2,3,7,8,9-HxCDF	0.622	2.488	0.751	B	<5*B	0.751	0.18775	0.1	0.1	0.0	2.8%	1.0%
1,2,3,4,7,8-HxCDD	0.139	0.556	0.626	--		0.626	0.626	0.1	0.1	0.1	2.3%	3.3%
1,2,3,6,7,8-HxCDD	0.12	0.48	1.21	--		1.21	1.21	0.1	0.1	0.1	4.5%	6.4%
1,2,3,7,8,9-HxCDD	0.12	0.48	0.93	J		0.93	0.465	0.1	0.1	0.0	3.4%	2.5%
1,2,3,4,6,7,8-HpCDF	9.53	38.12		D		2.3825		0.01	0.0	0.0	0.9%	0.0%
1,2,3,4,7,8,9-HpCDF	0.204	0.816	2.34	--		2.34	2.34	0.01	0.0	0.0	0.9%	1.2%
1,2,3,4,6,7,8-HpCDD	0.0477	0.1908	26.4	--		26.4	26.4	0.01	0.3	0.3	9.8%	13.9%
OCDF	0.16	0.64	36.5	B	<5*B	36.5	18.25	0.0001	0.0	0.0	0.1%	0.1%
OCDD	0.11	0.44	203	--		203	203	0.0001	0.0	0.0	0.8%	1.1%
PCB-81	0.524	2.096	1.28	J		1.28	0.32	0.0001	0.0	0.0	0.0%	0.0%
PCB-77	0.464	1.856	33.1	J		33.1	16.55	0.0001	0.0	0.0	0.1%	0.1%
PCB-123	2.08	8.32		--	<5*B	1.04		0.0001	0.0	0.0	0.0%	0.0%
PCB-118	1.97	7.88	361	BJ	<5*B	361	180.5	0.0001	0.0	0.0	1.3%	1.0%
PCB-114	2.39	9.56	7.54	B	<5*B	7.54	1.885	0.0005	0.0	0.0	0.1%	0.0%
PCB-105	2.45	9.8	164	B	<5*B	164	82	0.0001	0.0	0.0	0.6%	0.4%
PCB-126	0.403	1.612	7.61	--		7.61	7.61	0.1	0.8	0.8	28.1%	40.1%
PCB-167	0.94	3.76	33.4	B	<5*B	33.4	16.7	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	0.944	3.776	70.6	--		70.6	70.6	0.0005	0.0	0.0	1.3%	1.9%
PCB-157	1	4	18.5	--		18.5	18.5	0.0005	0.0	0.0	0.3%	0.5%
PCB-169	0.299	1.196	1.01	--		1.01	0.505	0.01	0.0	0.0	0.4%	0.3%
PCB-189	1.84	7.36	7.02	--		7.02	3.51	0.0001	0.0	0.0	0.0%	0.0%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	1.8	1.1	0.9	0.8	2.7	1.9

Sample ID 237 *Field* P-8

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.365	1.46	1.73	NJ		0.865	0	0.1	0.1	0.0	1.5%	0.0%
2,3,7,8-TCDD	0.102	0.408	0.192	--		0.192	0.096	1	0.2	0.1	3.2%	1.7%
1,2,3,7,8-PeCDF	0.128	0.512	3.92	--		3.92	3.92	0.05	0.2	0.2	3.3%	3.5%
2,3,4,7,8-PeCDF	0.114	0.456	1.23	--		1.23	1.23	0.5	0.6	0.6	10.4%	11.1%
1,2,3,7,8-PeCDD	0.104	0.416	0.527	--		0.527	0.527	1	0.5	0.5	8.9%	9.5%
1,2,3,4,7,8-HxCDF	0.0728	0.2912	5.89	--		5.89	5.89	0.1	0.6	0.6	9.9%	10.6%
1,2,3,6,7,8-HxCDF	0.0754	0.3016	3.75	--		3.75	3.75	0.1	0.4	0.4	6.3%	6.8%
2,3,4,6,7,8-HxCDF	0.0927	0.3708	2.18	--		2.18	2.18	0.1	0.2	0.2	3.7%	3.9%
1,2,3,7,8,9-HxCDF	0.111	0.444	1.52	B	<5*B	1.52	0.76	0.1	0.2	0.1	2.6%	1.4%
1,2,3,4,7,8-HxCDD	0.573	2.292		E		0.2865		0.1	0.0	0.0	0.5%	0.0%
1,2,3,6,7,8-HxCDD	0.1	0.4	1.04	--		1.04	1.04	0.1	0.1	0.1	1.8%	1.9%
1,2,3,7,8,9-HxCDD	0.1	0.4	0.821	--		0.821	0.821	0.1	0.1	0.1	1.4%	1.5%
1,2,3,4,6,7,8-HpCDF	0.184	0.736	17.5	--		17.5	17.5	0.01	0.2	0.2	2.9%	3.2%
1,2,3,4,7,8,9-HpCDF	0.375	1.5	7.25	--		7.25	7.25	0.01	0.1	0.1	1.2%	1.3%
1,2,3,4,6,7,8-HpCDD	0.286	1.144	15.4	--		15.4	15.4	0.01	0.2	0.2	2.6%	2.8%
OCDF	0.107	0.428	126	--		126	126	0.0001	0.0	0.0	0.2%	0.2%
OCDD	0.0828	0.3312	105	--		105	105	0.0001	0.0	0.0	0.2%	0.2%
PCB-81	0.419	1.676	3.27	J		3.27	1.635	0.0001	0.0	0.0	0.0%	0.0%
PCB-77	0.47	1.88	95.1	--		95.1	95.1	0.0001	0.0	0.0	0.2%	0.2%
PCB-123	2.96	11.84	20.7	--		20.7	20.7	0.0001	0.0	0.0	0.0%	0.0%
PCB-118	2.7	10.8	1290	CJ		1290	645	0.0001	0.1	0.1	2.2%	1.2%
PCB-114	3.24	12.96	23.9	--		23.9	23.9	0.0005	0.0	0.0	0.2%	0.2%
PCB-105	3.31	13.24	670	CJ		670	335	0.0001	0.1	0.0	1.1%	0.6%
PCB-126	0.697	2.788	19.9	--		19.9	19.9	0.1	2.0	2.0	33.5%	35.9%
PCB-167	0.443	1.772	93.7	--		93.7	93.7	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	0.482	1.928	208	--		208	208	0.0005	0.1	0.1	1.8%	1.9%
PCB-157	0.501	2.004	55.5	--		55.5	55.5	0.0005	0.0	0.0	0.5%	0.5%
PCB-169	1.1	4.4		E		0.55		0.01	0.0	0.0	0.1%	0.0%
PCB-189	0.39	1.56	13.7	--		13.7	13.7	0.0001	0.0	0.0	0.0%	0.0%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	3.6	3.3	2.3	2.2	5.9	5.5

Sample ID 270 *Field* P-7

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	1.4	5.6	0.47	NJ		0.35		0.1	0.0	0.0	1.8%	0.0%
2,3,7,8-TCDD	0.108	0.432		--		0.054		1	0.1	0.0	2.8%	0.0%
1,2,3,7,8-PeCDF	0.19	0.76	0.604	--		0.604	0.302	0.05	0.0	0.0	1.6%	1.1%
2,3,4,7,8-PeCDF	0.179	0.716	0.533	--		0.533	0.2665	0.5	0.3	0.1	14.0%	10.0%
1,2,3,7,8-PeCDD	0.0877	0.3508	0.523	--		0.523	0.523	1	0.5	0.5	27.5%	39.1%
1,2,3,4,7,8-HxCDF	0.202	0.808	0.995	--		0.995	0.995	0.1	0.1	0.1	5.2%	7.4%
1,2,3,6,7,8-HxCDF	0.84	3.36		E		0.42		0.1	0.0	0.0	2.2%	0.0%
2,3,4,6,7,8-HxCDF	0.451	1.804	0.528	B	<5*B	0.528	0.132	0.1	0.1	0.0	2.8%	1.0%
1,2,3,7,8,9-HxCDF	0.547	2.188		E	<5*B	0.2735		0.1	0.0	0.0	1.4%	0.0%
1,2,3,4,7,8-HxCDD	0.194	0.776	0.569	--		0.569	0.2845	0.1	0.1	0.0	3.0%	2.1%
1,2,3,6,7,8-HxCDD	0.169	0.676	1.17	--		1.17	1.17	0.1	0.1	0.1	6.1%	8.8%
1,2,3,7,8,9-HxCDD	0.171	0.684	0.774	--		0.774	0.774	0.1	0.1	0.1	4.1%	5.8%
1,2,3,4,6,7,8-HpCDF	4.55	18.2		D		1.1375		0.01	0.0	0.0	0.6%	0.0%
1,2,3,4,7,8,9-HpCDF	1.15	4.6	1.17	B	<5*B	1.17	0.2925	0.01	0.0	0.0	0.6%	0.2%
1,2,3,4,6,7,8-HpCDD	0.406	1.624	14.5	--		14.5	14.5	0.01	0.1	0.1	7.6%	10.8%
OCDF	0.022	0.088	18.7	B	<5*B	18.7	9.35	0.0001	0.0	0.0	0.1%	0.1%
OCDD	0.509	2.036	81.6	--		81.6	81.6	0.0001	0.0	0.0	0.4%	0.6%
PCB-81	0.364	1.456	0.773	J		0.773	0.19325	0.0001	0.0	0.0	0.0%	0.0%
PCB-77	0.425	1.7	17.4	--		17.4	17.4	0.0001	0.0	0.0	0.1%	0.1%
PCB-123	0.164	0.656	2.27	B	<5*B	2.27	1.135	0.0001	0.0	0.0	0.0%	0.0%
PCB-118	0.15	0.6	127	BJ	<5*B	127	63.5	0.0001	0.0	0.0	0.7%	0.5%
PCB-114	0.161	0.644	2.5	B	<5*B	2.5	1.25	0.0005	0.0	0.0	0.1%	0.0%
PCB-105	0.164	0.656	62.9	BJ	<5*B	62.9	31.45	0.0001	0.0	0.0	0.3%	0.2%
PCB-126	0.717	2.868	3.05	B		3.05	1.525	0.1	0.3	0.2	16.0%	11.4%
PCB-167	0.126	0.504	9.05	B	<5*B	9.05	4.525	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	0.137	0.548	19.3	B	<5*B	19.3	9.65	0.0005	0.0	0.0	0.5%	0.4%
PCB-157	0.142	0.568	4.48	B	<5*B	4.48	2.24	0.0005	0.0	0.0	0.1%	0.1%
PCB-169	0.256	1.024	0.401	--		0.401	0.2005	0.01	0.0	0.0	0.2%	0.1%
PCB-189	0.0327	0.1308	3.34	--		3.34	3.34	0.0001	0.0	0.0	0.0%	0.0%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	1.6	1.2	0.3	0.2	1.9	1.3

Sample ID 273 *Field* P-5

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.37	1.48	8.56	NJ		4.28	0	0.1	0.4	0.0	0.9%	0.0%
2,3,7,8-TCDD	0.366	1.464		E		0.183		1	0.2	0.0	0.4%	0.0%
1,2,3,7,8-PeCDF	0.2	0.8	6.85	--		6.85	6.85	0.05	0.3	0.3	0.7%	0.7%
2,3,4,7,8-PeCDF	0.184	0.736	5.43	--		5.43	5.43	0.5	2.7	2.7	5.6%	5.7%
1,2,3,7,8-PeCDD	0.176	0.704	1.77	--		1.77	1.77	1	1.8	1.8	3.6%	3.7%
1,2,3,4,7,8-HxCDF	0.327	1.308	13.1	--		13.1	13.1	0.1	1.3	1.3	2.7%	2.8%
1,2,3,6,7,8-HxCDF	0.291	1.164	8.26	--		8.26	8.26	0.1	0.8	0.8	1.7%	1.7%
2,3,4,6,7,8-HxCDF	0.374	1.496	5.23	--		5.23	5.23	0.1	0.5	0.5	1.1%	1.1%
1,2,3,7,8,9-HxCDF	2.63	10.52		E	<5*B	1.315		0.1	0.1	0.0	0.3%	0.0%
1,2,3,4,7,8-HxCDD	0.493	1.972	2.95	--		2.95	2.95	0.1	0.3	0.3	0.6%	0.6%
1,2,3,6,7,8-HxCDD	0.457	1.828	5.39	--		5.39	5.39	0.1	0.5	0.5	1.1%	1.1%
1,2,3,7,8,9-HxCDD	0.447	1.788	3.54	--		3.54	3.54	0.1	0.4	0.4	0.7%	0.7%
1,2,3,4,6,7,8-HpCDF	0.22	0.88	50.7	--		50.7	50.7	0.01	0.5	0.5	1.0%	1.1%
1,2,3,4,7,8,9-HpCDF	0.496	1.984	12.3	--		12.3	12.3	0.01	0.1	0.1	0.3%	0.3%
1,2,3,4,6,7,8-HpCDD	1.18	4.72	123	--		123	123	0.01	1.2	1.2	2.5%	2.6%
OCDF	0.126	0.504	186	--		186	186	0.0001	0.0	0.0	0.0%	0.0%
OCDD	0.151	0.604	747	--		747	747	0.0001	0.1	0.1	0.2%	0.2%
PCB-81	6.05	24.2	42	J		42	21	0.0001	0.0	0.0	0.0%	0.0%
PCB-77	6.59	26.36	1780	C		1780	1780	0.0001	0.2	0.2	0.4%	0.4%
PCB-123	126	504	921	C		921	921	0.0001	0.1	0.1	0.2%	0.2%
PCB-118	115	460	460	SJ		460	115	0.0001	0.0	0.0	0.1%	0.0%
PCB-114	143	572	773	C		773	773	0.0005	0.4	0.4	0.8%	0.8%
PCB-105	146	584	14300	SJ		14300	7150	0.0001	1.4	0.7	2.9%	1.5%
PCB-126	48	192	311	C		311	311	0.1	31.1	31.1	63.7%	65.7%
PCB-167	6.9	27.6	2700	C		2700	2700	0.00001	0.0	0.0	0.1%	0.1%
PCB-156	7.51	30.04	6300	C		6300	6300	0.0005	3.2	3.2	6.4%	6.7%
PCB-157	7.81	31.24	1540	C		1540	1540	0.0005	0.8	0.8	1.6%	1.6%
PCB-169	2.85	11.4	21.2	--		21.2	21.2	0.01	0.2	0.2	0.4%	0.4%
PCB-189	6.04	24.16	827	C		827	827	0.0001	0.1	0.1	0.2%	0.2%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	11.4	10.6	37.5	36.7	48.8	47.4

Sample ID 282 *Field* SP-3

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.587	2.348	7.85	NJ		3.925	0	0.1	0.4	0.0	1.2%	0.0%
2,3,7,8-TCDD	0.444	1.776	0.948	--		0.948	0.474	1	0.9	0.5	2.9%	1.6%
1,2,3,7,8-PeCDF	0.313	1.252	47.7	--		47.7	47.7	0.05	2.4	2.4	7.3%	8.0%
2,3,4,7,8-PeCDF	0.282	1.128	7.78	--		7.78	7.78	0.5	3.9	3.9	11.8%	13.0%
1,2,3,7,8-PeCDD	0.452	1.808	1.67	B	<5*B	1.67	0.4175	1	1.7	0.4	5.1%	1.4%
1,2,3,4,7,8-HxCDF	3.04	12.16	86.9	--		86.9	86.9	0.1	8.7	8.7	26.4%	29.2%
1,2,3,6,7,8-HxCDF	2.73	10.92	47.6	--		47.6	47.6	0.1	4.8	4.8	14.5%	16.0%
2,3,4,6,7,8-HxCDF	3.49	13.96	20.2	--		20.2	20.2	0.1	2.0	2.0	6.1%	6.8%
1,2,3,7,8,9-HxCDF	4.21	16.84	19.6	--		19.6	19.6	0.1	2.0	2.0	6.0%	6.6%
1,2,3,4,7,8-HxCDD	1.49	5.96		E		0.745		0.1	0.1	0.0	0.2%	0.0%
1,2,3,6,7,8-HxCDD	0.509	2.036	2.19	--		2.19	2.19	0.1	0.2	0.2	0.7%	0.7%
1,2,3,7,8,9-HxCDD	0.5	2	1.69	J		1.69	0.4225	0.1	0.2	0.0	0.5%	0.1%
1,2,3,4,6,7,8-HpCDF	207	828		D		51.75		0.01	0.5	0.0	1.6%	0.0%
1,2,3,4,7,8,9-HpCDF	0.21	0.84	107	--		107	107	0.01	1.1	1.1	3.3%	3.6%
1,2,3,4,6,7,8-HpCDD	0.201	0.804	29.4	--		29.4	29.4	0.01	0.3	0.3	0.9%	1.0%
OCDF	0.14	0.56	1860	--		1860	1860	0.0001	0.2	0.2	0.6%	0.6%
OCDD	0.179	0.716	186	--		186	186	0.0001	0.0	0.0	0.1%	0.1%
PCB-81	6.8	27.2	30.4	J		30.4	15.2	0.0001	0.0	0.0	0.0%	0.0%
PCB-77	5.11	20.44	737	J		737	368.5	0.0001	0.1	0.0	0.2%	0.1%
PCB-123	28.1	112.4		--	<5*B	14.05		0.0001	0.0	0.0	0.0%	0.0%
PCB-118	26.6	106.4	2620	CJ		2620	1310	0.0001	0.3	0.1	0.8%	0.4%
PCB-114	30.3	121.2	98.4	--		98.4	49.2	0.0005	0.0	0.0	0.1%	0.1%
PCB-105	31.1	124.4	1800	C		1800	1800	0.0001	0.2	0.2	0.5%	0.6%
PCB-126	1.42	5.68	28.8	--		28.8	28.8	0.1	2.9	2.9	8.8%	9.7%
PCB-167	3.9	15.6	81.5	--		81.5	81.5	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	3.92	15.68	171	--		171	171	0.0005	0.1	0.1	0.3%	0.3%
PCB-157	4.17	16.68	45.4	--		45.4	45.4	0.0005	0.0	0.0	0.1%	0.1%
PCB-169	1.32	5.28	3.42	--		3.42	1.71	0.01	0.0	0.0	0.1%	0.1%
PCB-189	11.3	45.2	40.8	--		40.8	20.4	0.0001	0.0	0.0	0.0%	0.0%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	29.3	26.4	3.6	3.4	32.9	29.8

Sample ID 299 *Field* SP-1

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.277	1.108	0.902	NJ		0.451	0	0.1	0.0	0.0	0.8%	0.0%
2,3,7,8-TCDD	0.229	0.916	0.879	--		0.879	0.4395	1	0.9	0.4	15.8%	11.6%
1,2,3,7,8-PeCDF	0.361	1.444	3.59	--		3.59	3.59	0.05	0.2	0.2	3.2%	4.7%
2,3,4,7,8-PeCDF	0.326	1.304	1.05	--		1.05	0.525	0.5	0.5	0.3	9.4%	6.9%
1,2,3,7,8-PeCDD	0.299	1.196	0.765	B	<5*B	0.765	0.19125	1	0.8	0.2	13.7%	5.1%
1,2,3,4,7,8-HxCDF	0.928	3.712	6.94	--		6.94	6.94	0.1	0.7	0.7	12.5%	18.3%
1,2,3,6,7,8-HxCDF	0.83	3.32	3.87	--		3.87	3.87	0.1	0.4	0.4	6.9%	10.2%
2,3,4,6,7,8-HxCDF	1.1	4.4	2.03	--		2.03	1.015	0.1	0.2	0.1	3.6%	2.7%
1,2,3,7,8,9-HxCDF	1.68	6.72	1.71	B	<5*B	1.71	0.4275	0.1	0.2	0.0	3.1%	1.1%
1,2,3,4,7,8-HxCDD	0.235	0.94	0.613	--		0.613	0.3065	0.1	0.1	0.0	1.1%	0.8%
1,2,3,6,7,8-HxCDD	1.04	4.16		E		0.52		0.1	0.1	0.0	0.9%	0.0%
1,2,3,7,8,9-HxCDD	0.205	0.82	0.726	J		0.726	0.1815	0.1	0.1	0.0	1.3%	0.5%
1,2,3,4,6,7,8-HpCDF	16.9	67.6		D		4.225		0.01	0.0	0.0	0.8%	0.0%
1,2,3,4,7,8,9-HpCDF	0.218	0.872	6.68	--		6.68	6.68	0.01	0.1	0.1	1.2%	1.8%
1,2,3,4,6,7,8-HpCDD	0.0667	0.2668	22.1	--		22.1	22.1	0.01	0.2	0.2	4.0%	5.8%
OCDF	0.134	0.536	97.5	--		97.5	97.5	0.0001	0.0	0.0	0.2%	0.3%
OCDD	0.0921	0.3684	167	--		167	167	0.0001	0.0	0.0	0.3%	0.4%
PCB-81	1.15	4.6	2.12	J		2.12	0.53	0.0001	0.0	0.0	0.0%	0.0%
PCB-77	1.06	4.24	61.3	J		61.3	30.65	0.0001	0.0	0.0	0.1%	0.1%
PCB-123	6.36	25.44		--	<5*B	3.18		0.0001	0.0	0.0	0.0%	0.0%
PCB-118	6.01	24.04	815	CJ		815	407.5	0.0001	0.1	0.0	1.5%	1.1%
PCB-114	7.36	29.44	19.5	--		19.5	9.75	0.0005	0.0	0.0	0.2%	0.1%
PCB-105	7.55	30.2	374	--		374	374	0.0001	0.0	0.0	0.7%	1.0%
PCB-126	0.634	2.536	9.5	--		9.5	9.5	0.1	1.0	1.0	17.1%	25.1%
PCB-167	2.95	11.8	59.3	--		59.3	59.3	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	2.96	11.84	125	--		125	125	0.0005	0.1	0.1	1.1%	1.7%
PCB-157	3.15	12.6	32.1	--		32.1	32.1	0.0005	0.0	0.0	0.3%	0.4%
PCB-169	0.879	3.516	1.24	--		1.24	0.62	0.01	0.0	0.0	0.2%	0.2%
PCB-189	2.4	9.6	13	--		13	13	0.0001	0.0	0.0	0.0%	0.0%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	4.4	2.7	1.2	1.1	5.6	3.8

Sample ID 347 *Field* SP-7

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.738	2.952	20.3	NJ		10.15	0	0.1	1.0	0.0	1.0%	0.0%
2,3,7,8-TCDD	0.276	1.104	0.989	--		0.989	0.4945	1	1.0	0.5	1.0%	0.5%
1,2,3,7,8-PeCDF	0.459	1.836	131	--		131	131	0.05	6.6	6.6	6.5%	7.2%
2,3,4,7,8-PeCDF	0.412	1.648	26.6	--		26.6	26.6	0.5	13.3	13.3	13.2%	14.6%
1,2,3,7,8-PeCDD	0.181	0.724	8.53	--		8.53	8.53	1	8.5	8.5	8.5%	9.4%
1,2,3,4,7,8-HxCDF	12.6	50.4	241	--		241	241	0.1	24.1	24.1	23.9%	26.5%
1,2,3,6,7,8-HxCDF	11.4	45.6	124	--		124	124	0.1	12.4	12.4	12.3%	13.6%
2,3,4,6,7,8-HxCDF	16.3	65.2	61.5	--		61.5	30.75	0.1	6.2	3.1	6.1%	3.4%
1,2,3,7,8,9-HxCDF	18.5	74	59.7	--		59.7	29.85	0.1	6.0	3.0	5.9%	3.3%
1,2,3,4,7,8-HxCDD	0.742	2.968	13	--		13	13	0.1	1.3	1.3	1.3%	1.4%
1,2,3,6,7,8-HxCDD	0.651	2.604	19.8	--		19.8	19.8	0.1	2.0	2.0	2.0%	2.2%
1,2,3,7,8,9-HxCDD	0.646	2.584	12.9	J		12.9	6.45	0.1	1.3	0.6	1.3%	0.7%
1,2,3,4,6,7,8-HpCDF	531	2120		D		132.75		0.01	1.3	0.0	1.3%	0.0%
1,2,3,4,7,8,9-HpCDF	0.462	1.848	278	--		278	278	0.01	2.8	2.8	2.8%	3.1%
1,2,3,4,6,7,8-HpCDD	0.556	2.224	530	--		530	530	0.01	5.3	5.3	5.3%	5.8%
OCDF	0.245	0.98	2770	S		2770	2770	0.0001	0.3	0.3	0.3%	0.3%
OCDD	0.338	1.352	3530	S		3530	3530	0.0001	0.4	0.4	0.3%	0.4%
PCB-81	1.96	7.84	8.21	J		8.21	4.105	0.0001	0.0	0.0	0.0%	0.0%
PCB-77	1.61	6.44	249	J		249	124.5	0.0001	0.0	0.0	0.0%	0.0%
PCB-123	32.6	130.4		--	<5*B	16.3		0.0001	0.0	0.0	0.0%	0.0%
PCB-118	30.8	123.2	5140	CJ		5140	2570	0.0001	0.5	0.3	0.5%	0.3%
PCB-114	39.3	157.2	124	--		124	62	0.0005	0.1	0.0	0.1%	0.0%
PCB-105	40.3	161.2	2390	C		2390	2390	0.0001	0.2	0.2	0.2%	0.3%
PCB-126	1.09	4.36	56.6	--		56.6	56.6	0.1	5.7	5.7	5.6%	6.2%
PCB-167	26	104	552	C		552	552	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	26.1	104.4	1090	C		1090	1090	0.0005	0.5	0.5	0.5%	0.6%
PCB-157	27.8	111.2	257	--		257	257	0.0005	0.1	0.1	0.1%	0.1%
PCB-169	4.11	16.44	10.8	--		10.8	5.4	0.01	0.1	0.1	0.1%	0.1%
PCB-189	19.9	79.6	161	--		161	161	0.0001	0.0	0.0	0.0%	0.0%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	93.6	84.1	7.3	6.9	100.9	91.0

Sample ID 404 *Field* P-9

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.201	0.804	3.02	NJ		1.51	0	0.1	0.2	0.0	2.1%	0.0%
2,3,7,8-TCDD	0.215	0.86	0.156	--		0.1075		1	0.1	0.0	1.5%	0.0%
1,2,3,7,8-PeCDF	0.128	0.512	6.82	--		6.82	6.82	0.05	0.3	0.3	4.7%	5.3%
2,3,4,7,8-PeCDF	0.12	0.48	2.34	--		2.34	2.34	0.5	1.2	1.2	16.1%	18.3%
1,2,3,7,8-PeCDD	0.2	0.8	0.637	--		0.637	0.3185	1	0.6	0.3	8.8%	5.0%
1,2,3,4,7,8-HxCDF	0.633	2.532	10.8	--		10.8	10.8	0.1	1.1	1.1	14.9%	16.9%
1,2,3,6,7,8-HxCDF	0.543	2.172	6.01	--		6.01	6.01	0.1	0.6	0.6	8.3%	9.4%
2,3,4,6,7,8-HxCDF	0.672	2.688	3.24	--		3.24	3.24	0.1	0.3	0.3	4.5%	5.1%
1,2,3,7,8,9-HxCDF	0.848	3.392	2.53	B	<5*B	2.53	0.6325	0.1	0.3	0.1	3.5%	1.0%
1,2,3,4,7,8-HxCDD	0.198	0.792	0.763	--		0.763	0.3815	0.1	0.1	0.0	1.0%	0.6%
1,2,3,6,7,8-HxCDD	0.165	0.66	1.04	--		1.04	1.04	0.1	0.1	0.1	1.4%	1.6%
1,2,3,7,8,9-HxCDD	0.17	0.68	0.889	--		0.889	0.889	0.1	0.1	0.1	1.2%	1.4%
1,2,3,4,6,7,8-HpCDF	0.304	1.216	28.2	--		28.2	28.2	0.01	0.3	0.3	3.9%	4.4%
1,2,3,4,7,8,9-HpCDF	0.601	2.404	11	--		11	11	0.01	0.1	0.1	1.5%	1.7%
1,2,3,4,6,7,8-HpCDD	0.259	1.036	14.1	--		14.1	14.1	0.01	0.1	0.1	1.9%	2.2%
OCDF	0.134	0.536	156	--		156	156	0.0001	0.0	0.0	0.2%	0.2%
OCDD	0.155	0.62	103	--		103	103	0.0001	0.0	0.0	0.1%	0.2%
PCB-81	0.477	1.908	4.24	J		4.24	2.12	0.0001	0.0	0.0	0.0%	0.0%
PCB-77	0.576	2.304	88.9	--		88.9	88.9	0.0001	0.0	0.0	0.1%	0.1%
PCB-123	5.37	21.48	36.1	--		36.1	36.1	0.0001	0.0	0.0	0.0%	0.1%
PCB-118	4.91	19.64	934	CJ		934	467	0.0001	0.1	0.0	1.3%	0.7%
PCB-114	18.7	74.8		E		9.35		0.0005	0.0	0.0	0.1%	0.0%
PCB-105	5.67	22.68	457	J		457	228.5	0.0001	0.0	0.0	0.6%	0.4%
PCB-126	0.909	3.636	15.2	--		15.2	15.2	0.1	1.5	1.5	20.9%	23.8%
PCB-167	1.62	6.48	60.1	--		60.1	60.1	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	1.76	7.04	133	--		133	133	0.0005	0.1	0.1	0.9%	1.0%
PCB-157	1.83	7.32	37.6	--		37.6	37.6	0.0005	0.0	0.0	0.3%	0.3%
PCB-169	0.328	1.312	1.51	--		1.51	1.51	0.01	0.0	0.0	0.2%	0.2%
PCB-189	2.35	9.4	12.8	--		12.8	12.8	0.0001	0.0	0.0	0.0%	0.0%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	5.5	4.7	1.8	1.7	7.3	6.4

Sample ID 461 ***Field*** **SP-11**

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.114	0.456	0.567	NJ		0.2835	0	0.1	0.0	0.0	0.9%	0.0%
2,3,7,8-TCDD	0.204	0.816		--		0.102		1	0.1	0.0	3.4%	0.0%
1,2,3,7,8-PeCDF	0.163	0.652	2.2	--		2.2	2.2	0.05	0.1	0.1	3.7%	4.8%
2,3,4,7,8-PeCDF	0.137	0.548	0.551	--		0.551	0.551	0.5	0.3	0.3	9.1%	12.1%
1,2,3,7,8-PeCDD	0.205	0.82	0.342	B	<5*B	0.342	0.0855	1	0.3	0.1	11.4%	3.8%
1,2,3,4,7,8-HxCDF	0.575	2.3	3.86	--		3.86	3.86	0.1	0.4	0.4	12.8%	16.9%
1,2,3,6,7,8-HxCDF	0.508	2.032	2.27	--		2.27	2.27	0.1	0.2	0.2	7.5%	10.0%
2,3,4,6,7,8-HxCDF	0.753	3.012	1.24	B	<5*B	1.24	0.31	0.1	0.1	0.0	4.1%	1.4%
1,2,3,7,8,9-HxCDF	1.03	4.12	1.15	B	<5*B	1.15	0.2875	0.1	0.1	0.0	3.8%	1.3%
1,2,3,4,7,8-HxCDD	0.207	0.828	0.463	--		0.463	0.2315	0.1	0.0	0.0	1.5%	1.0%
1,2,3,6,7,8-HxCDD	0.174	0.696	0.535	--		0.535	0.2675	0.1	0.1	0.0	1.8%	1.2%
1,2,3,7,8,9-HxCDD	0.175	0.7	0.416	J		0.416	0.104	0.1	0.0	0.0	1.4%	0.5%
1,2,3,4,6,7,8-HpCDF	10.7	42.8		D		2.675		0.01	0.0	0.0	0.9%	0.0%
1,2,3,4,7,8,9-HpCDF	0.2	0.8	3.94	--		3.94	3.94	0.01	0.0	0.0	1.3%	1.7%
1,2,3,4,6,7,8-HpCDD	0.136	0.544	12.9	--		12.9	12.9	0.01	0.1	0.1	4.3%	5.7%
OCDF	0.188	0.752	73.2	--		73.2	73.2	0.0001	0.0	0.0	0.2%	0.3%
OCDD	0.151	0.604	112	--		112	112	0.0001	0.0	0.0	0.4%	0.5%
PCB-81	0.985	3.94	1.31	J		1.31	0.3275	0.0001	0.0	0.0	0.0%	0.0%
PCB-77	0.887	3.548	38	J		38	19	0.0001	0.0	0.0	0.1%	0.1%
PCB-123	8.91	35.64		--	<5*B	4.455		0.0001	0.0	0.0	0.0%	0.0%
PCB-118	8.43	33.72	986	CJ		986	493	0.0001	0.1	0.0	3.3%	2.2%
PCB-114	10.2	40.8	23.4	--		23.4	11.7	0.0005	0.0	0.0	0.4%	0.3%
PCB-105	10.5	42	446	--		446	446	0.0001	0.0	0.0	1.5%	2.0%
PCB-126	0.73	2.92	6.78	--		6.78	6.78	0.1	0.7	0.7	22.5%	29.8%
PCB-167	1.84	7.36	62.4	--		62.4	62.4	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	1.85	7.4	165	--		165	165	0.0005	0.1	0.1	2.7%	3.6%
PCB-157	1.96	7.84	35.6	--		35.6	35.6	0.0005	0.0	0.0	0.6%	0.8%
PCB-169	0.386	1.544	0.804	--		0.804	0.402	0.01	0.0	0.0	0.3%	0.2%
PCB-189	1.77	7.08	17.5	--		17.5	17.5	0.0001	0.0	0.0	0.1%	0.1%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	2.1	1.4	0.9	0.9	3.0	2.3

Sample ID 497 *Field* SP-9

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.447	1.788	0.717	NJ		0.3585	0	0.1	0.0	0.0	0.9%	0.0%
2,3,7,8-TCDD	0.123	0.492		--		0.0615		1	0.1	0.0	1.6%	0.0%
1,2,3,7,8-PeCDF	0.221	0.884	4.73	--		4.73	4.73	0.05	0.2	0.2	6.1%	8.1%
2,3,4,7,8-PeCDF	0.192	0.768	0.906	--		0.906	0.906	0.5	0.5	0.5	11.7%	15.4%
1,2,3,7,8-PeCDD	0.443	1.772		E	<5*B	0.2215		1	0.2	0.0	5.7%	0.0%
1,2,3,4,7,8-HxCDF	0.523	2.092	8.86	--		8.86	8.86	0.1	0.9	0.9	23.0%	30.2%
1,2,3,6,7,8-HxCDF	0.461	1.844	5.06	--		5.06	5.06	0.1	0.5	0.5	13.1%	17.2%
2,3,4,6,7,8-HxCDF	0.557	2.228	2.16	--		2.16	1.08	0.1	0.2	0.1	5.6%	3.7%
1,2,3,7,8,9-HxCDF	0.633	2.532	2.18	B	<5*B	2.18	0.545	0.1	0.2	0.1	5.6%	1.9%
1,2,3,4,7,8-HxCDD	0.113	0.452	0.457	--		0.457	0.457	0.1	0.0	0.0	1.2%	1.6%
1,2,3,6,7,8-HxCDD	0.0954	0.3816	0.715	--		0.715	0.715	0.1	0.1	0.1	1.9%	2.4%
1,2,3,7,8,9-HxCDD	0.0962	0.3848	0.666	J		0.666	0.333	0.1	0.1	0.0	1.7%	1.1%
1,2,3,4,6,7,8-HpCDF	22.5	90		D		5.625		0.01	0.1	0.0	1.5%	0.0%
1,2,3,4,7,8,9-HpCDF	0.127	0.508	9.97	--		9.97	9.97	0.01	0.1	0.1	2.6%	3.4%
1,2,3,4,6,7,8-HpCDD	0.118	0.472	9.88	--		9.88	9.88	0.01	0.1	0.1	2.6%	3.4%
OCDF	0.0927	0.3708	153	--		153	153	0.0001	0.0	0.0	0.4%	0.5%
OCDD	0.0911	0.3644	75.4	--		75.4	75.4	0.0001	0.0	0.0	0.2%	0.3%
PCB-81	0.212	0.848	1.05	J		1.05	0.525	0.0001	0.0	0.0	0.0%	0.0%
PCB-77	1.67	6.68	18.5	BJ	<5*B	18.5	9.25	0.0001	0.0	0.0	0.0%	0.0%
PCB-123	8.81	35.24		--	<5*B	4.405		0.0001	0.0	0.0	0.0%	0.0%
PCB-118	8.32	33.28	641	CJ		641	320.5	0.0001	0.1	0.0	1.7%	1.1%
PCB-114	10.7	42.8	17.1	--		17.1	8.55	0.0005	0.0	0.0	0.2%	0.1%
PCB-105	10.9	43.6	278	--		278	278	0.0001	0.0	0.0	0.7%	0.9%
PCB-126	1.42	5.68	3.88	--		3.88	1.94	0.1	0.4	0.2	10.1%	6.6%
PCB-167	14.7	58.8	42.9	B	<5*B	42.9	10.725	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	14.8	59.2	103	--		103	103	0.0005	0.1	0.1	1.3%	1.8%
PCB-157	15.7	62.8	26	--		26	13	0.0005	0.0	0.0	0.3%	0.2%
PCB-169	0.204	0.816	0.645	--		0.645	0.3225	0.01	0.0	0.0	0.2%	0.1%
PCB-189	36.1	144.4		--		18.05		0.0001	0.0	0.0	0.0%	0.0%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	3.3	2.6	0.6	0.3	3.9	2.9

Sample ID 515 *Field* SP-2

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.688	2.752	7.58	NJ		3.79	0	0.1	0.4	0.0	1.7%	0.0%
2,3,7,8-TCDD	0.339	1.356		E		0.1695		1	0.2	0.0	0.8%	0.0%
1,2,3,7,8-PeCDF	0.228	0.912	34.9	--		34.9	34.9	0.05	1.7	1.7	7.9%	9.2%
2,3,4,7,8-PeCDF	0.196	0.784	7.1	--		7.1	7.1	0.5	3.6	3.6	16.0%	18.8%
1,2,3,7,8-PeCDD	0.369	1.476	1.07	B	<5*B	1.07	0.2675	1	1.1	0.3	4.8%	1.4%
1,2,3,4,7,8-HxCDF	3.87	15.48	60.8	--		60.8	60.8	0.1	6.1	6.1	27.5%	32.1%
1,2,3,6,7,8-HxCDF	3.48	13.92	32.6	--		32.6	32.6	0.1	3.3	3.3	14.7%	17.2%
2,3,4,6,7,8-HxCDF	4.37	17.48	12.8	--		12.8	6.4	0.1	1.3	0.6	5.8%	3.4%
1,2,3,7,8,9-HxCDF	5.11	20.44	12.4	--		12.4	6.2	0.1	1.2	0.6	5.6%	3.3%
1,2,3,4,7,8-HxCDD	0.543	2.172	1.31	--		1.31	0.655	0.1	0.1	0.1	0.6%	0.3%
1,2,3,6,7,8-HxCDD	0.446	1.784	1.51	--		1.51	0.755	0.1	0.2	0.1	0.7%	0.4%
1,2,3,7,8,9-HxCDD	1.17	4.68		EJ		0.585		0.1	0.1	0.0	0.3%	0.0%
1,2,3,4,6,7,8-HpCDF	125	500		D		31.25		0.01	0.3	0.0	1.4%	0.0%
1,2,3,4,7,8,9-HpCDF	0.314	1.256	62.9	--		62.9	62.9	0.01	0.6	0.6	2.8%	3.3%
1,2,3,4,6,7,8-HpCDD	0.308	1.232	24.7	--		24.7	24.7	0.01	0.2	0.2	1.1%	1.3%
OCDF	0.223	0.892	892	--		892	892	0.0001	0.1	0.1	0.4%	0.5%
OCDD	0.193	0.772	178	--		178	178	0.0001	0.0	0.0	0.1%	0.1%
PCB-81	3.43	13.72	10.4	J		10.4	2.6	0.0001	0.0	0.0	0.0%	0.0%
PCB-77	2.92	11.68	87.6	J		87.6	43.8	0.0001	0.0	0.0	0.0%	0.0%
PCB-123	5.53	22.12		--	<5*B	2.765		0.0001	0.0	0.0	0.0%	0.0%
PCB-118	5.23	20.92	872	CJ		872	436	0.0001	0.1	0.0	0.4%	0.2%
PCB-114	61	244		E		30.5		0.0005	0.0	0.0	0.1%	0.0%
PCB-105	6.37	25.48	448	--		448	448	0.0001	0.0	0.0	0.2%	0.2%
PCB-126	0.569	2.276	14.4	--		14.4	14.4	0.1	1.4	1.4	6.5%	7.6%
PCB-167	7.73	30.92	79.6	--		79.6	79.6	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	7.76	31.04	146	--		146	146	0.0005	0.1	0.1	0.3%	0.4%
PCB-157	8.25	33	41.5	--		41.5	41.5	0.0005	0.0	0.0	0.1%	0.1%
PCB-169	0.632	2.528	2.52	--		2.52	1.26	0.01	0.0	0.0	0.1%	0.1%
PCB-189	13.9	55.6	27.5	--		27.5	13.75	0.0001	0.0	0.0	0.0%	0.0%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	20.4	17.3	1.7	1.6	22.1	18.9

Sample ID 523 *Field* SP-6

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.294	1.176	3.1	NJ		1.55	0	0.1	0.2	0.0	1.1%	0.0%
2,3,7,8-TCDD	0.179	0.716	0.394	--		0.394	0.197	1	0.4	0.2	2.8%	1.6%
1,2,3,7,8-PeCDF	0.251	1.004	14.7	--		14.7	14.7	0.05	0.7	0.7	5.2%	5.8%
2,3,4,7,8-PeCDF	0.221	0.884	3.58	--		3.58	3.58	0.5	1.8	1.8	12.7%	14.2%
1,2,3,7,8-PeCDD	0.285	1.14	0.89	B	<5*B	0.89	0.2225	1	0.9	0.2	6.3%	1.8%
1,2,3,4,7,8-HxCDF	0.855	3.42	26	--		26	26	0.1	2.6	2.6	18.4%	20.6%
1,2,3,6,7,8-HxCDF	0.74	2.96	13.9	--		13.9	13.9	0.1	1.4	1.4	9.8%	11.0%
2,3,4,6,7,8-HxCDF	0.998	3.992	6.49	--		6.49	6.49	0.1	0.6	0.6	4.6%	5.2%
1,2,3,7,8,9-HxCDF	1.23	4.92	5.48	--		5.48	5.48	0.1	0.5	0.5	3.9%	4.4%
1,2,3,4,7,8-HxCDD	0.373	1.492	1.18	--		1.18	0.59	0.1	0.1	0.1	0.8%	0.5%
1,2,3,6,7,8-HxCDD	0.327	1.308	1.94	--		1.94	1.94	0.1	0.2	0.2	1.4%	1.5%
1,2,3,7,8,9-HxCDD	0.324	1.296	1.41	J		1.41	0.705	0.1	0.1	0.1	1.0%	0.6%
1,2,3,4,6,7,8-HpCDF	59.1	236.4		D		14.775		0.01	0.1	0.0	1.0%	0.0%
1,2,3,4,7,8,9-HpCDF	0.295	1.18	26	--		26	26	0.01	0.3	0.3	1.8%	2.1%
1,2,3,4,6,7,8-HpCDD	0.297	1.188	42.9	--		42.9	42.9	0.01	0.4	0.4	3.0%	3.4%
OCDF	0.196	0.784	352	--		352	352	0.0001	0.0	0.0	0.2%	0.3%
OCDD	0.193	0.772	328	--		328	328	0.0001	0.0	0.0	0.2%	0.3%
PCB-81	2.22	8.88	4.65	J		4.65	1.1625	0.0001	0.0	0.0	0.0%	0.0%
PCB-77	1.85	7.4	161	J		161	80.5	0.0001	0.0	0.0	0.1%	0.1%
PCB-123	34.1	136.4		--	<5*B	17.05		0.0001	0.0	0.0	0.0%	0.0%
PCB-118	32.2	128.8	3930	CJ		3930	1965	0.0001	0.4	0.2	2.8%	1.6%
PCB-114	39.1	156.4	96.1	--		96.1	48.05	0.0005	0.0	0.0	0.3%	0.2%
PCB-105	40.1	160.4	1690	C		1690	1690	0.0001	0.2	0.2	1.2%	1.3%
PCB-126	1.28	5.12	26.2	--		26.2	26.2	0.1	2.6	2.6	18.5%	20.8%
PCB-167	3.65	14.6	232	--		232	232	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	3.67	14.68	559	C		559	559	0.0005	0.3	0.3	2.0%	2.2%
PCB-157	3.9	15.6	133	--		133	133	0.0005	0.1	0.1	0.5%	0.5%
PCB-169	1.2	4.8	2.76	--		2.76	1.38	0.01	0.0	0.0	0.2%	0.1%
PCB-189	7.05	28.2	41.5	I		41.5	41.5	0.0001	0.0	0.0	0.0%	0.0%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	10.5	9.2	3.6	3.4	14.1	12.6

Sample ID 555 *Field* SP-8

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.603	2.412	7.39	NJ		3.695	0	0.1	0.4	0.0	1.1%	0.0%
2,3,7,8-TCDD	0.432	1.728		E		0.216		1	0.2	0.0	0.6%	0.0%
1,2,3,7,8-PeCDF	0.286	1.144	56.2	--		56.2	56.2	0.05	2.8	2.8	8.3%	9.5%
2,3,4,7,8-PeCDF	0.234	0.936	9.69	--		9.69	9.69	0.5	4.8	4.8	14.3%	16.4%
1,2,3,7,8-PeCDD	1.84	7.36		E	<5*B	0.92		1	0.9	0.0	2.7%	0.0%
1,2,3,4,7,8-HxCDF	6.35	25.4	93.3	--		93.3	93.3	0.1	9.3	9.3	27.5%	31.7%
1,2,3,6,7,8-HxCDF	5.32	21.28	49.7	--		49.7	49.7	0.1	5.0	5.0	14.7%	16.9%
2,3,4,6,7,8-HxCDF	7.24	28.96	22.1	--		22.1	11.05	0.1	2.2	1.1	6.5%	3.8%
1,2,3,7,8,9-HxCDF	8.42	33.68	20.3	--		20.3	10.15	0.1	2.0	1.0	6.0%	3.4%
1,2,3,4,7,8-HxCDD	0.571	2.284	2.66	--		2.66	2.66	0.1	0.3	0.3	0.8%	0.9%
1,2,3,6,7,8-HxCDD	0.469	1.876	4.34	--		4.34	4.34	0.1	0.4	0.4	1.3%	1.5%
1,2,3,7,8,9-HxCDD	0.475	1.9	3.41	J		3.41	1.705	0.1	0.3	0.2	1.0%	0.6%
1,2,3,4,6,7,8-HpCDF	203	812		D		50.75		0.01	0.5	0.0	1.5%	0.0%
1,2,3,4,7,8,9-HpCDF	0.256	1.024	100	--		100	100	0.01	1.0	1.0	2.9%	3.4%
1,2,3,4,6,7,8-HpCDD	0.146	0.584	78.1	--		78.1	78.1	0.01	0.8	0.8	2.3%	2.7%
OCDF	0.104	0.416	1390	--		1390	1390	0.0001	0.1	0.1	0.4%	0.5%
OCDD	0.131	0.524	460	--		460	460	0.0001	0.0	0.0	0.1%	0.2%
PCB-81	4.65	18.6	6.86	J		6.86	1.715	0.0001	0.0	0.0	0.0%	0.0%
PCB-77	4.31	17.24	163	J		163	81.5	0.0001	0.0	0.0	0.0%	0.0%
PCB-123	13.5	54		--	<5*B	6.75		0.0001	0.0	0.0	0.0%	0.0%
PCB-118	12.8	51.2	2460	CJ		2460	1230	0.0001	0.2	0.1	0.7%	0.4%
PCB-114	15.1	60.4	66.2	--		66.2	66.2	0.0005	0.0	0.0	0.1%	0.1%
PCB-105	15.5	62	1170	C		1170	1170	0.0001	0.1	0.1	0.3%	0.4%
PCB-126	1	4	20.3	--		20.3	20.3	0.1	2.0	2.0	6.0%	6.9%
PCB-167	4.33	17.32	154	--		154	154	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	4.35	17.4	344	--		344	344	0.0005	0.2	0.2	0.5%	0.6%
PCB-157	4.63	18.52	87.3	--		87.3	87.3	0.0005	0.0	0.0	0.1%	0.1%
PCB-169	0.984	3.936	3.36	--		3.36	1.68	0.01	0.0	0.0	0.1%	0.1%
PCB-189	7.49	29.96	42.7	--		42.7	42.7	0.0001	0.0	0.0	0.0%	0.0%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	31.2	26.9	2.7	2.5	33.9	29.5

Sample ID 571 *Field* SP-10

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.703	2.812	0.745	NJ		0.3725	0	0.1	0.0	0.0	1.1%	0.0%
2,3,7,8-TCDD	0.152	0.608		--		0.076		1	0.1	0.0	2.3%	0.0%
1,2,3,7,8-PeCDF	0.214	0.856	3.74	--		3.74	3.74	0.05	0.2	0.2	5.7%	7.1%
2,3,4,7,8-PeCDF	0.173	0.692	0.82	--		0.82	0.82	0.5	0.4	0.4	12.4%	15.6%
1,2,3,7,8-PeCDD	0.377	1.508		E	<5*B	0.1885		1	0.2	0.0	5.7%	0.0%
1,2,3,4,7,8-HxCDF	0.61	2.44	7.36	--		7.36	7.36	0.1	0.7	0.7	22.3%	28.0%
1,2,3,6,7,8-HxCDF	0.524	2.096	3.95	--		3.95	3.95	0.1	0.4	0.4	12.0%	15.0%
2,3,4,6,7,8-HxCDF	0.741	2.964	1.93	--		1.93	0.965	0.1	0.2	0.1	5.9%	3.7%
1,2,3,7,8,9-HxCDF	0.962	3.848	1.73	B	<5*B	1.73	0.4325	0.1	0.2	0.0	5.3%	1.6%
1,2,3,4,7,8-HxCDD	0.175	0.7	0.405	--		0.405	0.2025	0.1	0.0	0.0	1.2%	0.8%
1,2,3,6,7,8-HxCDD	0.148	0.592	0.758	--		0.758	0.758	0.1	0.1	0.1	2.3%	2.9%
1,2,3,7,8,9-HxCDD	0.148	0.592	0.853	J		0.853	0.4265	0.1	0.1	0.0	2.6%	1.6%
1,2,3,4,6,7,8-HpCDF	19.5	78		D		4.875		0.01	0.0	0.0	1.5%	0.0%
1,2,3,4,7,8,9-HpCDF	0.139	0.556	8.26	--		8.26	8.26	0.01	0.1	0.1	2.5%	3.1%
1,2,3,4,6,7,8-HpCDD	0.0932	0.3728	11.3	--		11.3	11.3	0.01	0.1	0.1	3.4%	4.3%
OCDF	0.149	0.596	135	--		135	135	0.0001	0.0	0.0	0.4%	0.5%
OCDD	0.0721	0.2884	102	--		102	102	0.0001	0.0	0.0	0.3%	0.4%
PCB-81	1.07	4.28	1.43	J		1.43	0.3575	0.0001	0.0	0.0	0.0%	0.0%
PCB-77	0.81	3.24	30.1	BJ	<5*B	30.1	15.05	0.0001	0.0	0.0	0.1%	0.1%
PCB-123	2.53	10.12		--	<5*B	1.265		0.0001	0.0	0.0	0.0%	0.0%
PCB-118	2.39	9.56	150	BJ	<5*B	150	75	0.0001	0.0	0.0	0.5%	0.3%
PCB-114	2.9	11.6	3.55	B	<5*B	3.55	0.8875	0.0005	0.0	0.0	0.1%	0.0%
PCB-105	2.97	11.88	85.5	B	<5*B	85.5	42.75	0.0001	0.0	0.0	0.3%	0.2%
PCB-126	0.722	2.888	3.79	--		3.79	3.79	0.1	0.4	0.4	11.5%	14.4%
PCB-167	2.22	8.88	14.8	B	<5*B	14.8	7.4	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	2.23	8.92	22.7	B	<5*B	22.7	11.35	0.0005	0.0	0.0	0.3%	0.2%
PCB-157	2.37	9.48	7.16	B	<5*B	7.16	1.79	0.0005	0.0	0.0	0.1%	0.0%
PCB-169	0.375	1.5	0.674	--		0.674	0.337	0.01	0.0	0.0	0.2%	0.1%
PCB-189	5.42	21.68		E		2.71		0.0001	0.0	0.0	0.0%	0.0%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	2.9	2.2	0.4	0.4	3.3	2.6

Sample ID 692 ***Field*** **SP-12**

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.0688	0.2752	0.58	NJ		0.29	0	0.1	0.0	0.0	0.8%	0.0%
2,3,7,8-TCDD	0.137	0.548		--		0.0685		1	0.1	0.0	1.9%	0.0%
1,2,3,7,8-PeCDF	0.166	0.664	3.77	--		3.77	3.77	0.05	0.2	0.2	5.2%	6.6%
2,3,4,7,8-PeCDF	0.141	0.564	0.944	--		0.944	0.944	0.5	0.5	0.5	12.9%	16.5%
1,2,3,7,8-PeCDD	0.122	0.488	0.412	B	<5*B	0.412	0.103	1	0.4	0.1	11.3%	3.6%
1,2,3,4,7,8-HxCDF	0.512	2.048	6.94	--		6.94	6.94	0.1	0.7	0.7	19.0%	24.3%
1,2,3,6,7,8-HxCDF	0.456	1.824	3.87	--		3.87	3.87	0.1	0.4	0.4	10.6%	13.6%
2,3,4,6,7,8-HxCDF	0.637	2.548	1.92	--		1.92	0.96	0.1	0.2	0.1	5.3%	3.4%
1,2,3,7,8,9-HxCDF	0.783	3.132	1.89	B	<5*B	1.89	0.4725	0.1	0.2	0.0	5.2%	1.7%
1,2,3,4,7,8-HxCDD	0.182	0.728	0.36	--		0.36	0.18	0.1	0.0	0.0	1.0%	0.6%
1,2,3,6,7,8-HxCDD	0.152	0.608	0.596	--		0.596	0.298	0.1	0.1	0.0	1.6%	1.0%
1,2,3,7,8,9-HxCDD	0.154	0.616	0.444	J		0.444	0.111	0.1	0.0	0.0	1.2%	0.4%
1,2,3,4,6,7,8-HpCDF	16.2	64.8		D		4.05		0.01	0.0	0.0	1.1%	0.0%
1,2,3,4,7,8,9-HpCDF	0.144	0.576	8	--		8	8	0.01	0.1	0.1	2.2%	2.8%
1,2,3,4,6,7,8-HpCDD	0.0915	0.366	11	--		11	11	0.01	0.1	0.1	3.0%	3.9%
OCDF	0.123	0.492	139	--		139	139	0.0001	0.0	0.0	0.4%	0.5%
OCDD	0.0868	0.3472	90.2	--		90.2	90.2	0.0001	0.0	0.0	0.2%	0.3%
PCB-81	0.894	3.576	1.08	J		1.08	0.27	0.0001	0.0	0.0	0.0%	0.0%
PCB-77	0.763	3.052	24.6	BJ	<5*B	24.6	12.3	0.0001	0.0	0.0	0.1%	0.0%
PCB-123	1.65	6.6		--	<5*B	0.825		0.0001	0.0	0.0	0.0%	0.0%
PCB-118	1.56	6.24	334	BJ	<5*B	334	167	0.0001	0.0	0.0	0.9%	0.6%
PCB-114	1.82	7.28	7.94	B	<5*B	7.94	3.97	0.0005	0.0	0.0	0.1%	0.1%
PCB-105	1.87	7.48	147	B	<5*B	147	73.5	0.0001	0.0	0.0	0.4%	0.3%
PCB-126	0.445	1.78	5.28	--		5.28	5.28	0.1	0.5	0.5	14.4%	18.5%
PCB-167	0.879	3.516	31.2	B	<5*B	31.2	15.6	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	0.883	3.532	62.5	--		62.5	62.5	0.0005	0.0	0.0	0.9%	1.1%
PCB-157	0.939	3.756	15.7	B	<5*B	15.7	7.85	0.0005	0.0	0.0	0.2%	0.1%
PCB-169	0.329	1.316	0.811	--		0.811	0.4055	0.01	0.0	0.0	0.2%	0.1%
PCB-189	1.41	5.64	13.1	--		13.1	13.1	0.0001	0.0	0.0	0.0%	0.0%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	3.0	2.3	0.6	0.6	3.7	2.9

Sample ID 714 *Field* P-10

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.558	2.232	0.633	NJ		0.3165	0	0.1	0.0	0.0	0.5%	0.0%
2,3,7,8-TCDD	0.17	0.68		--		0.085		1	0.1	0.0	1.3%	0.0%
1,2,3,7,8-PeCDF	0.382	1.528	0.652	--		0.652	0.326	0.05	0.0	0.0	0.5%	0.3%
2,3,4,7,8-PeCDF	0.349	1.396	0.486	--		0.486	0.243	0.5	0.2	0.1	3.6%	2.1%
1,2,3,7,8-PeCDD	0.104	0.416	0.53	--		0.53	0.53	1	0.5	0.5	7.9%	8.9%
1,2,3,4,7,8-HxCDF	0.249	0.996	1.32	--		1.32	1.32	0.1	0.1	0.1	2.0%	2.2%
1,2,3,6,7,8-HxCDF	0.958	3.832		E		0.479		0.1	0.0	0.0	0.7%	0.0%
2,3,4,6,7,8-HxCDF	0.31	1.24	0.942	B	<5*B	0.942	0.2355	0.1	0.1	0.0	1.4%	0.4%
1,2,3,7,8,9-HxCDF	0.466	1.864	0.617	B	<5*B	0.617	0.15425	0.1	0.1	0.0	0.9%	0.3%
1,2,3,4,7,8-HxCDD	0.171	0.684	0.865	--		0.865	0.865	0.1	0.1	0.1	1.3%	1.5%
1,2,3,6,7,8-HxCDD	0.153	0.612	1.44	--		1.44	1.44	0.1	0.1	0.1	2.1%	2.4%
1,2,3,7,8,9-HxCDD	0.152	0.608	1.05	--		1.05	1.05	0.1	0.1	0.1	1.6%	1.8%
1,2,3,4,6,7,8-HpCDF	12.9	51.6		D		3.225		0.01	0.0	0.0	0.5%	0.0%
1,2,3,4,7,8,9-HpCDF	1.59	6.36		E	<5*B	0.795		0.01	0.0	0.0	0.1%	0.0%
1,2,3,4,6,7,8-HpCDD	0.553	2.212	32.4	--		32.4	32.4	0.01	0.3	0.3	4.8%	5.5%
OCDF	0.137	0.548	26.7	B	<5*B	26.7	13.35	0.0001	0.0	0.0	0.0%	0.0%
OCDD	0.0865	0.346	210	--		210	210	0.0001	0.0	0.0	0.3%	0.4%
PCB-81	1.53	6.12	4.6	J		4.6	1.15	0.0001	0.0	0.0	0.0%	0.0%
PCB-77	1.77	7.08	127	--		127	127	0.0001	0.0	0.0	0.2%	0.2%
PCB-123	12.7	50.8	83.4	--		83.4	83.4	0.0001	0.0	0.0	0.1%	0.1%
PCB-118	11.6	46.4	4760	CJ		4760	2380	0.0001	0.5	0.2	7.1%	4.0%
PCB-114	14.1	56.4	108	--		108	108	0.0005	0.1	0.1	0.8%	0.9%
PCB-105	14.4	57.6	2000	CJ		2000	1000	0.0001	0.2	0.1	3.0%	1.7%
PCB-126	1.57	6.28	34.6	--		34.6	34.6	0.1	3.5	3.5	51.5%	58.4%
PCB-167	0.324	1.296	310	--		310	310	0.00001	0.0	0.0	0.0%	0.1%
PCB-156	0.352	1.408	826	C		826	826	0.0005	0.4	0.4	6.1%	7.0%
PCB-157	0.367	1.468	187	--		187	187	0.0005	0.1	0.1	1.4%	1.6%
PCB-169	0.388	1.552	1.63	--		1.63	1.63	0.01	0.0	0.0	0.2%	0.3%
PCB-189	0.386	1.544	40.9	--		40.9	40.9	0.0001	0.0	0.0	0.1%	0.1%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	2.0	1.5	4.7	4.4	6.7	5.9

Sample ID 769 *Field* P-2

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.457	1.828		--		0.2285		0.1	0.0	0.0	1.6%	0.0%
2,3,7,8-TCDD	0.179	0.716		--		0.0895		1	0.1	0.0	6.2%	0.0%
1,2,3,7,8-PeCDF	0.133	0.532	0.345	--		0.345	0.1725	0.05	0.0	0.0	1.2%	1.0%
2,3,4,7,8-PeCDF	0.116	0.464	0.277	--		0.277	0.1385	0.5	0.1	0.1	9.6%	8.2%
1,2,3,7,8-PeCDD	0.185	0.74	0.342	--		0.342	0.171	1	0.3	0.2	23.8%	20.3%
1,2,3,4,7,8-HxCDF	0.234	0.936	0.986	--		0.986	0.986	0.1	0.1	0.1	6.8%	11.7%
1,2,3,6,7,8-HxCDF	0.202	0.808	0.834	--		0.834	0.834	0.1	0.1	0.1	5.8%	9.9%
2,3,4,6,7,8-HxCDF	0.257	1.028	0.62	B	<5*B	0.62	0.155	0.1	0.1	0.0	4.3%	1.8%
1,2,3,7,8,9-HxCDF	0.308	1.232	0.623	B	<5*B	0.623	0.15575	0.1	0.1	0.0	4.3%	1.9%
1,2,3,4,7,8-HxCDD	0.117	0.468	0.264	--		0.264	0.132	0.1	0.0	0.0	1.8%	1.6%
1,2,3,6,7,8-HxCDD	0.1	0.4	0.597	--		0.597	0.597	0.1	0.1	0.1	4.1%	7.1%
1,2,3,7,8,9-HxCDD	0.1	0.4	0.629	--		0.629	0.629	0.1	0.1	0.1	4.4%	7.5%
1,2,3,4,6,7,8-HpCDF	0.425	1.7	5.19	--		5.19	5.19	0.01	0.1	0.1	3.6%	6.2%
1,2,3,4,7,8,9-HpCDF	1.66	6.64		E	<5*B	0.83		0.01	0.0	0.0	0.6%	0.0%
1,2,3,4,6,7,8-HpCDD	0.101	0.404	5.64	--		5.64	5.64	0.01	0.1	0.1	3.9%	6.7%
OCDF	0.0989	0.3956	36	--		36	36	0.0001	0.0	0.0	0.3%	0.4%
OCDD	0.142	0.568	40.6	--		40.6	40.6	0.0001	0.0	0.0	0.3%	0.5%
PCB-81	0.241	0.964	1.01	J		1.01	0.505	0.0001	0.0	0.0	0.0%	0.0%
PCB-77	0.214	0.856	10.8	B	<5*B	10.8	5.4	0.0001	0.0	0.0	0.1%	0.1%
PCB-123	0.467	1.868	2.44	B	<5*B	2.44	1.22	0.0001	0.0	0.0	0.0%	0.0%
PCB-118	0.427	1.708	135	BJ	<5*B	135	67.5	0.0001	0.0	0.0	0.9%	0.8%
PCB-114	0.469	1.876	2.91	B	<5*B	2.91	1.455	0.0005	0.0	0.0	0.1%	0.1%
PCB-105	0.479	1.916	57.8	BJ	<5*B	57.8	28.9	0.0001	0.0	0.0	0.4%	0.3%
PCB-126	0.207	0.828	2.12	B		2.12	1.06	0.1	0.2	0.1	14.7%	12.6%
PCB-167	0.0946	0.3784	8.82	B	<5*B	8.82	4.41	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	0.103	0.412	20	B	<5*B	20	10	0.0005	0.0	0.0	0.7%	0.6%
PCB-157	0.107	0.428	5.11	B	<5*B	5.11	2.555	0.0005	0.0	0.0	0.2%	0.2%
PCB-169	0.0699	0.2796	0.336	--		0.336	0.336	0.01	0.0	0.0	0.2%	0.4%
PCB-189	0.0753	0.3012	1.61	B	<5*B	1.61	0.805	0.0001	0.0	0.0	0.0%	0.0%

* Adjusted concentrations were modified using validation flags.

The Dioxin/Furan Only Full TEQ is used in this report. --->

Dioxin/Furan Only		PCBs Only		All Analytes	
Full	Quant	Full	Quant	Full	Quant
1.2	0.7	0.3	0.1	1.4	0.8

Sample ID 819 *Field* P-3

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.655	2.62	11.3	NJ		5.65	0	0.1	0.6	0.0	3.4%	0.0%
2,3,7,8-TCDD	0.175	0.7	1.03	--		1.03	1.03	1	1.0	1.0	6.1%	6.7%
1,2,3,7,8-PeCDF	1.55	6.2	12.4	--		12.4	12.4	0.05	0.6	0.6	3.7%	4.0%
2,3,4,7,8-PeCDF	1.4	5.6	6.31	--		6.31	6.31	0.5	3.2	3.2	18.8%	20.6%
1,2,3,7,8-PeCDD	0.188	0.752	1.28	--		1.28	1.28	1	1.3	1.3	7.6%	8.3%
1,2,3,4,7,8-HxCDF	2.13	8.52	23.4	--		23.4	23.4	0.1	2.3	2.3	13.9%	15.3%
1,2,3,6,7,8-HxCDF	1.9	7.6	13.1	--		13.1	13.1	0.1	1.3	1.3	7.8%	8.5%
2,3,4,6,7,8-HxCDF	2.39	9.56	7.27	--		7.27	3.635	0.1	0.7	0.4	4.3%	2.4%
1,2,3,7,8,9-HxCDF	2.81	11.24	5.14	--		5.14	2.57	0.1	0.5	0.3	3.1%	1.7%
1,2,3,4,7,8-HxCDD	0.526	2.104	1.7	--		1.7	0.85	0.1	0.2	0.1	1.0%	0.6%
1,2,3,6,7,8-HxCDD	0.441	1.764	2.51	--		2.51	2.51	0.1	0.3	0.3	1.5%	1.6%
1,2,3,7,8,9-HxCDD	0.445	1.78	2.66	--		2.66	2.66	0.1	0.3	0.3	1.6%	1.7%
1,2,3,4,6,7,8-HpCDF	0.26	1.04	61.6	--		61.6	61.6	0.01	0.6	0.6	3.7%	4.0%
1,2,3,4,7,8,9-HpCDF	0.458	1.832	19.4	--		19.4	19.4	0.01	0.2	0.2	1.2%	1.3%
1,2,3,4,6,7,8-HpCDD	0.283	1.132	44.8	--		44.8	44.8	0.01	0.4	0.4	2.7%	2.9%
OCDF	0.261	1.044	286	--		286	286	0.0001	0.0	0.0	0.2%	0.2%
OCDD	0.297	1.188	277	--		277	277	0.0001	0.0	0.0	0.2%	0.2%
PCB-81	0.526	2.104	6.44	J		6.44	3.22	0.0001	0.0	0.0	0.0%	0.0%
PCB-77	0.49	1.96	166	--		166	166	0.0001	0.0	0.0	0.1%	0.1%
PCB-123	84.8	339.2		E		42.4		0.0001	0.0	0.0	0.0%	0.0%
PCB-118	5.26	21.04	1990	CJ		1990	995	0.0001	0.2	0.1	1.2%	0.6%
PCB-114	79.3	317.2		E		39.65		0.0005	0.0	0.0	0.1%	0.0%
PCB-105	5.7	22.8	940	CJ		940	470	0.0001	0.1	0.0	0.6%	0.3%
PCB-126	0.314	1.256	27.2	--		27.2	27.2	0.1	2.7	2.7	16.2%	17.7%
PCB-167	1.52	6.08	264	--		264	264	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	1.65	6.6	145	--		145	145	0.0005	0.1	0.1	0.4%	0.5%
PCB-157	1.72	6.88	126	--		126	126	0.0005	0.1	0.1	0.4%	0.4%
PCB-169	0.251	1.004	3.77	--		3.77	3.77	0.01	0.0	0.0	0.2%	0.2%
PCB-189	1.75	7	45	--		45	45	0.0001	0.0	0.0	0.0%	0.0%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	13.5	12.3	3.2	3.1	16.8	15.3

Sample ID 839 *Field* P-6

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.614	2.456	0.311	NJ		0.1535		0.1	0.0	0.0	0.1%	0.0%
2,3,7,8-TCDD	0.0985	0.394		--		0.04925		1	0.0	0.0	0.5%	0.0%
1,2,3,7,8-PeCDF	0.0738	0.2952	1.26	--		1.26	1.26	0.05	0.1	0.1	0.6%	0.6%
2,3,4,7,8-PeCDF	0.0684	0.2736	1.09	--		1.09	1.09	0.5	0.5	0.5	5.2%	5.3%
1,2,3,7,8-PeCDD	0.00685	0.0274	1.86	--		1.86	1.86	1	1.9	1.9	17.7%	18.1%
1,2,3,4,7,8-HxCDF	0.344	1.376	6.92	--		6.92	6.92	0.1	0.7	0.7	6.6%	6.7%
1,2,3,6,7,8-HxCDF	0.445	1.78	3.14	--		3.14	3.14	0.1	0.3	0.3	3.0%	3.1%
2,3,4,6,7,8-HxCDF	0.566	2.264	4.5	--		4.5	4.5	0.1	0.5	0.5	4.3%	4.4%
1,2,3,7,8,9-HxCDF	0.663	2.652	1.29	B	<5*B	1.29	0.3225	0.1	0.1	0.0	1.2%	0.3%
1,2,3,4,7,8-HxCDD	0.0919	0.3676	3.45	--		3.45	3.45	0.1	0.3	0.3	3.3%	3.4%
1,2,3,6,7,8-HxCDD	0.0798	0.3192	7.9	--		7.9	7.9	0.1	0.8	0.8	7.5%	7.7%
1,2,3,7,8,9-HxCDD	0.0802	0.3208	6.87	--		6.87	6.87	0.1	0.7	0.7	6.6%	6.7%
1,2,3,4,6,7,8-HpCDF	0.212	0.848	70	--		70	70	0.01	0.7	0.7	6.7%	6.8%
1,2,3,4,7,8,9-HpCDF	0.36	1.44	6.86	--		6.86	6.86	0.01	0.1	0.1	0.7%	0.7%
1,2,3,4,6,7,8-HpCDD	2.29	9.16	264	--		264	264	0.01	2.6	2.6	25.2%	25.7%
OCDF	0.0619	0.2476	243	--		243	243	0.0001	0.0	0.0	0.2%	0.2%
OCDD	0.0102	0.0408	2190	--		2190	2190	0.0001	0.2	0.2	2.1%	2.1%
PCB-81	0.39	1.56	2.21	J		2.21	1.105	0.0001	0.0	0.0	0.0%	0.0%
PCB-77	0.455	1.82	51.8	--		51.8	51.8	0.0001	0.0	0.0	0.0%	0.1%
PCB-123	1.63	6.52	16.7	--		16.7	16.7	0.0001	0.0	0.0	0.0%	0.0%
PCB-118	1.49	5.96	669	CJ		669	334.5	0.0001	0.1	0.0	0.6%	0.3%
PCB-114	1.69	6.76	23	--		23	23	0.0005	0.0	0.0	0.1%	0.1%
PCB-105	1.73	6.92	376	J		376	188	0.0001	0.0	0.0	0.4%	0.2%
PCB-126	1.14	4.56	7.03	--		7.03	7.03	0.1	0.7	0.7	6.7%	6.8%
PCB-167	0.563	2.252	41.6	--		41.6	41.6	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	0.612	2.448	89.3	--		89.3	89.3	0.0005	0.0	0.0	0.4%	0.4%
PCB-157	0.637	2.548	27.4	--		27.4	27.4	0.0005	0.0	0.0	0.1%	0.1%
PCB-169	0.335	1.34	0.498	--		0.498	0.249	0.01	0.0	0.0	0.0%	0.0%
PCB-189	0.687	2.748	7.01	--		7.01	7.01	0.0001	0.0	0.0	0.0%	0.0%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	9.6	9.4	0.9	0.8	10.5	10.3

Sample ID 909 ***Field*** **SP-4**

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.303	1.212	1.38	NJ		0.69	0	0.1	0.1	0.0	1.1%	0.0%
2,3,7,8-TCDD	0.434	1.736		--		0.217		1	0.2	0.0	3.6%	0.0%
1,2,3,7,8-PeCDF	0.296	1.184	8.89	--		8.89	8.89	0.05	0.4	0.4	7.4%	9.1%
2,3,4,7,8-PeCDF	0.257	1.028	1.29	--		1.29	1.29	0.5	0.6	0.6	10.7%	13.3%
1,2,3,7,8-PeCDD	0.476	1.904		E	<5*B	0.238		1	0.2	0.0	3.9%	0.0%
1,2,3,4,7,8-HxCDF	0.915	3.66	15.9	--		15.9	15.9	0.1	1.6	1.6	26.4%	32.7%
1,2,3,6,7,8-HxCDF	0.798	3.192	8.42	--		8.42	8.42	0.1	0.8	0.8	14.0%	17.3%
2,3,4,6,7,8-HxCDF	1.27	5.08	4.19	--		4.19	2.095	0.1	0.4	0.2	7.0%	4.3%
1,2,3,7,8,9-HxCDF	1.72	6.88	3.82	--		3.82	1.91	0.1	0.4	0.2	6.3%	3.9%
1,2,3,4,7,8-HxCDD	0.346	1.384	0.486	--		0.486	0.243	0.1	0.0	0.0	0.8%	0.5%
1,2,3,6,7,8-HxCDD	0.295	1.18	0.843	--		0.843	0.4215	0.1	0.1	0.0	1.4%	0.9%
1,2,3,7,8,9-HxCDD	0.668	2.672		EJ		0.334		0.1	0.0	0.0	0.6%	0.0%
1,2,3,4,6,7,8-HpCDF	40.5	162		D		10.125		0.01	0.1	0.0	1.7%	0.0%
1,2,3,4,7,8,9-HpCDF	0.576	2.304	19.4	--		19.4	19.4	0.01	0.2	0.2	3.2%	4.0%
1,2,3,4,6,7,8-HpCDD	0.246	0.984	10.7	--		10.7	10.7	0.01	0.1	0.1	1.8%	2.2%
OCDF	0.33	1.32	435	--		435	435	0.0001	0.0	0.0	0.7%	0.9%
OCDD	0.389	1.556	84.3	--		84.3	84.3	0.0001	0.0	0.0	0.1%	0.2%
PCB-81	1.03	4.12	1.8	J		1.8	0.45	0.0001	0.0	0.0	0.0%	0.0%
PCB-77	0.936	3.744	31.2	BJ	<5*B	31.2	15.6	0.0001	0.0	0.0	0.1%	0.0%
PCB-123	3.02	12.08		--	<5*B	1.51		0.0001	0.0	0.0	0.0%	0.0%
PCB-118	2.86	11.44	227	BJ	<5*B	227	113.5	0.0001	0.0	0.0	0.4%	0.2%
PCB-114	3.29	13.16	5.8	B	<5*B	5.8	1.45	0.0005	0.0	0.0	0.0%	0.0%
PCB-105	3.37	13.48	116	B	<5*B	116	58	0.0001	0.0	0.0	0.2%	0.1%
PCB-126	0.983	3.932	4.84	--		4.84	4.84	0.1	0.5	0.5	8.0%	10.0%
PCB-167	2.2	8.8	21.7	B	<5*B	21.7	10.85	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	2.21	8.84	38	B	<5*B	38	19	0.0005	0.0	0.0	0.3%	0.2%
PCB-157	2.35	9.4	11.1	B	<5*B	11.1	5.55	0.0005	0.0	0.0	0.1%	0.1%
PCB-169	0.398	1.592	0.849	--		0.849	0.4245	0.01	0.0	0.0	0.1%	0.1%
PCB-189	2.97	11.88	5.85	--		5.85	2.925	0.0001	0.0	0.0	0.0%	0.0%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	5.5	4.3	0.6	0.5	6.0	4.9

Sample ID **523-B** ***Bulk*** **bulk SP-6**

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.589	2.356	3.19	NJ		1.595	0	0.1	0.2	0.0	1.2%	0.0%
2,3,7,8-TCDD	0.166	0.664	0.483	--		0.483	0.2415	1	0.5	0.2	3.6%	2.1%
1,2,3,7,8-PeCDF	0.183	0.732	14	--		14	14	0.05	0.7	0.7	5.3%	6.2%
2,3,4,7,8-PeCDF	0.163	0.652	3.52	--		3.52	3.52	0.5	1.8	1.8	13.3%	15.5%
1,2,3,7,8-PeCDD	0.885	3.54		E	<5*B	0.4425		1	0.4	0.0	3.3%	0.0%
1,2,3,4,7,8-HxCDF	2.27	9.08	25.3	--		25.3	25.3	0.1	2.5	2.5	19.1%	22.3%
1,2,3,6,7,8-HxCDF	1.97	7.88	13.6	--		13.6	13.6	0.1	1.4	1.4	10.3%	12.0%
2,3,4,6,7,8-HxCDF	2.64	10.56	6.68	--		6.68	3.34	0.1	0.7	0.3	5.0%	2.9%
1,2,3,7,8,9-HxCDF	3.51	14.04	5.72	--		5.72	2.86	0.1	0.6	0.3	4.3%	2.5%
1,2,3,4,7,8-HxCDD	0.346	1.384	1.27	--		1.27	0.635	0.1	0.1	0.1	1.0%	0.6%
1,2,3,6,7,8-HxCDD	0.305	1.22	1.7	--		1.7	1.7	0.1	0.2	0.2	1.3%	1.5%
1,2,3,7,8,9-HxCDD	0.301	1.204	1.27	J		1.27	0.635	0.1	0.1	0.1	1.0%	0.6%
1,2,3,4,6,7,8-HpCDF	56.5	226		D		14.125		0.01	0.1	0.0	1.1%	0.0%
1,2,3,4,7,8,9-HpCDF	0.398	1.592	27.9	--		27.9	27.9	0.01	0.3	0.3	2.1%	2.5%
1,2,3,4,6,7,8-HpCDD	0.169	0.676	40.9	--		40.9	40.9	0.01	0.4	0.4	3.1%	3.6%
OCDF	0.137	0.548	429	--		429	429	0.0001	0.0	0.0	0.3%	0.4%
OCDD	0.172	0.688	305	--		305	305	0.0001	0.0	0.0	0.2%	0.3%
PCB-81	5.49	21.96	4.72	J		2.745		0.0001	0.0	0.0	0.0%	0.0%
PCB-77	4.48	17.92	147	J		147	73.5	0.0001	0.0	0.0	0.1%	0.1%
PCB-123	24.6	98.4		--	<5*B	12.3		0.0001	0.0	0.0	0.0%	0.0%
PCB-118	23.2	92.8	3220	CJ		3220	1610	0.0001	0.3	0.2	2.4%	1.4%
PCB-114	29.1	116.4		B	<5*B	14.55		0.0005	0.0	0.0	0.1%	0.0%
PCB-105	29.8	119.2	1440	C		1440	1440	0.0001	0.1	0.1	1.1%	1.3%
PCB-126	2.7	10.8	24.4	--		24.4	24.4	0.1	2.4	2.4	18.4%	21.5%
PCB-167	6.32	25.28	191	--		191	191	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	6.35	25.4	462	--		462	462	0.0005	0.2	0.2	1.7%	2.0%
PCB-157	6.75	27	109	--		109	109	0.0005	0.1	0.1	0.4%	0.5%
PCB-169	0.856	3.424	2.3	--		2.3	1.15	0.01	0.0	0.0	0.2%	0.1%
PCB-189	10.7	42.8	51.6	--		51.6	51.6	0.0001	0.0	0.0	0.0%	0.0%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	10.0	8.3	3.2	3.1	13.2	11.3

Sample ID 883 ***Duplicate*** **dup SP-4**

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.956	3.824	1.17	NJ		0.585	0	0.1	0.1	0.0	1.1%	0.0%
2,3,7,8-TCDD	0.141	0.564		E		0.0705		1	0.1	0.0	1.4%	0.0%
1,2,3,7,8-PeCDF	0.109	0.436	7.19	--		7.19	7.19	0.05	0.4	0.4	6.9%	8.4%
2,3,4,7,8-PeCDF	0.0929	0.3716	1.28	--		1.28	1.28	0.5	0.6	0.6	12.3%	14.9%
1,2,3,7,8-PeCDD	0.415	1.66		E	<5*B	0.2075		1	0.2	0.0	4.0%	0.0%
1,2,3,4,7,8-HxCDF	0.984	3.936	13.8	--		13.8	13.8	0.1	1.4	1.4	26.5%	32.2%
1,2,3,6,7,8-HxCDF	0.865	3.46	7.21	--		7.21	7.21	0.1	0.7	0.7	13.8%	16.8%
2,3,4,6,7,8-HxCDF	1.09	4.36	3.27	--		3.27	1.635	0.1	0.3	0.2	6.3%	3.8%
1,2,3,7,8,9-HxCDF	1.32	5.28	3.17	B	<5*B	3.17	0.7925	0.1	0.3	0.1	6.1%	1.8%
1,2,3,4,7,8-HxCDD	0.433	1.732		E		0.2165		0.1	0.0	0.0	0.4%	0.0%
1,2,3,6,7,8-HxCDD	0.0698	0.2792	0.792	--		0.792	0.792	0.1	0.1	0.1	1.5%	1.8%
1,2,3,7,8,9-HxCDD	0.0696	0.2784	0.831	J		0.831	0.4155	0.1	0.1	0.0	1.6%	1.0%
1,2,3,4,6,7,8-HpCDF	34.4	137.6		D		8.6		0.01	0.1	0.0	1.7%	0.0%
1,2,3,4,7,8,9-HpCDF	0.155	0.62	16.7	--		16.7	16.7	0.01	0.2	0.2	3.2%	3.9%
1,2,3,4,6,7,8-HpCDD	0.0864	0.3456	10.6	--		10.6	10.6	0.01	0.1	0.1	2.0%	2.5%
OCDF	0.0525	0.21	282	--		282	282	0.0001	0.0	0.0	0.5%	0.7%
OCDD	0.0764	0.3056	86.9	--		86.9	86.9	0.0001	0.0	0.0	0.2%	0.2%
PCB-81	1.42	5.68	1.68	J		1.68	0.42	0.0001	0.0	0.0	0.0%	0.0%
PCB-77	1.28	5.12	30.1	BJ	<5*B	30.1	15.05	0.0001	0.0	0.0	0.1%	0.0%
PCB-123	4.83	19.32		--	<5*B	2.415		0.0001	0.0	0.0	0.0%	0.0%
PCB-118	4.56	18.24	217	BJ	<5*B	217	108.5	0.0001	0.0	0.0	0.4%	0.3%
PCB-114	5.55	22.2	5.28	B	<5*B	2.775		0.0005	0.0	0.0	0.0%	0.0%
PCB-105	5.69	22.76	116	B	<5*B	116	58	0.0001	0.0	0.0	0.2%	0.1%
PCB-126	0.38	1.52	4.8	--		4.8	4.8	0.1	0.5	0.5	9.2%	11.2%
PCB-167	2.26	9.04	19.2	B	<5*B	19.2	9.6	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	2.27	9.08	34.3	B	<5*B	34.3	17.15	0.0005	0.0	0.0	0.3%	0.2%
PCB-157	2.41	9.64	12.1	B	<5*B	12.1	6.05	0.0005	0.0	0.0	0.1%	0.1%
PCB-169	0.284	1.136	0.756	--		0.756	0.378	0.01	0.0	0.0	0.1%	0.1%
PCB-189	3.19	12.76	5.8	--		5.8	2.9	0.0001	0.0	0.0	0.0%	0.0%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	4.7	3.8	0.5	0.5	5.2	4.3

Sample ID 364 ***Field Blank*** **f blank**

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	1.2	4.8		--		0.6		0.1	0.1	0.0	3.0%	0.0%
2,3,7,8-TCDD	0.595	2.38		--		0.2975		1	0.3	0.0	15.1%	0.0%
1,2,3,7,8-PeCDF	0.491	1.964		--		0.2455		0.05	0.0	0.0	0.6%	0.0%
2,3,4,7,8-PeCDF	0.39	1.56		--		0.195		0.5	0.1	0.0	5.0%	0.0%
1,2,3,7,8-PeCDD	0.717	2.868		E	<5*B	0.3585		1	0.4	0.0	18.2%	0.0%
1,2,3,4,7,8-HxCDF	0.691	2.764	0.739	--	<5*B	0.739	0.3695	0.1	0.1	0.0	3.8%	5.1%
1,2,3,6,7,8-HxCDF	0.595	2.38	0.968	B	<5*B	0.968	0.242	0.1	0.1	0.0	4.9%	3.4%
2,3,4,6,7,8-HxCDF	0.782	3.128	0.671	B	<5*B	0.391		0.1	0.0	0.0	2.0%	0.0%
1,2,3,7,8,9-HxCDF	1.32	5.28	0.643	B	<5*B	0.66		0.1	0.1	0.0	3.4%	0.0%
1,2,3,4,7,8-HxCDD	0.781	3.124		E		0.3905		0.1	0.0	0.0	2.0%	0.0%
1,2,3,6,7,8-HxCDD	0.295	1.18	1.41	--		1.41	1.41	0.1	0.1	0.1	7.2%	19.6%
1,2,3,7,8,9-HxCDD	0.296	1.184	1.03	J		1.03	0.2575	0.1	0.1	0.0	5.2%	3.6%
1,2,3,4,6,7,8-HpCDF	5.58	22.32		D	<5*B	1.395		0.01	0.0	0.0	0.7%	0.0%
1,2,3,4,7,8,9-HpCDF	0.933	3.732		E		0.4665		0.01	0.0	0.0	0.2%	0.0%
1,2,3,4,6,7,8-HpCDD	0.357	1.428	38.8	--		38.8	38.8	0.01	0.4	0.4	19.7%	54.0%
OCDF	0.391	1.564	13.7	B	<5*B	13.7	6.85	0.0001	0.0	0.0	0.1%	0.1%
OCDD	0.271	1.084	333	--		333	333	0.0001	0.0	0.0	1.7%	4.6%
PCB-81	4.19	16.76		J		2.095		0.0001	0.0	0.0	0.0%	0.0%
PCB-77	3.59	14.36	6.05	BJ	<5*B	6.05	1.5125	0.0001	0.0	0.0	0.0%	0.0%
PCB-123	1.92	7.68		--	<5*B	0.96		0.0001	0.0	0.0	0.0%	0.0%
PCB-118	1.82	7.28	134	BJ	<5*B	134	67	0.0001	0.0	0.0	0.7%	0.9%
PCB-114	2.01	8.04	3.63	B	<5*B	3.63	0.9075	0.0005	0.0	0.0	0.1%	0.1%
PCB-105	2.06	8.24	59.8	B	<5*B	59.8	29.9	0.0001	0.0	0.0	0.3%	0.4%
PCB-126	0.264	1.056	1.03	--		1.03	0.515	0.1	0.1	0.1	5.2%	7.2%
PCB-167	2.3	9.2	10.8	B	<5*B	10.8	5.4	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	2.31	9.24	24.2	B	<5*B	24.2	12.1	0.0005	0.0	0.0	0.6%	0.8%
PCB-157	2.45	9.8	6.07	B	<5*B	6.07	1.5175	0.0005	0.0	0.0	0.2%	0.1%
PCB-169	0.384	1.536		--		0.192		0.01	0.0	0.0	0.1%	0.0%
PCB-189	3.26	13.04	2.18	--		1.63		0.0001	0.0	0.0	0.0%	0.0%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	1.8	0.6	0.1	0.1	2.0	0.7

Sample ID **GAANLMB** ***Lab Blank*** **lab blank**

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.526	2.104		--		0.263		0.1	0.0	0.0	2.9%	0.0%
2,3,7,8-TCDD	0.139	0.556		--		0.0695		1	0.1	0.0	7.6%	0.0%
1,2,3,7,8-PeCDF	0.406	1.624		E		0.203		0.05	0.0	0.0	1.1%	0.0%
2,3,4,7,8-PeCDF	0.286	1.144		--		0.143		0.5	0.1	0.0	7.8%	0.0%
1,2,3,7,8-PeCDD	0.162	0.648	0.424	--		0.424	0.212	1	0.4	0.2	46.2%	62.5%
1,2,3,4,7,8-HxCDF	0.308	1.232	0.372	--		0.372	0.186	0.1	0.0	0.0	4.1%	5.5%
1,2,3,6,7,8-HxCDF	0.276	1.104	0.344	--		0.344	0.172	0.1	0.0	0.0	3.7%	5.1%
2,3,4,6,7,8-HxCDF	0.324	1.296	0.326	--		0.326	0.163	0.1	0.0	0.0	3.6%	4.8%
1,2,3,7,8,9-HxCDF	0.422	1.688	0.64	--		0.64	0.32	0.1	0.1	0.0	7.0%	9.4%
1,2,3,4,7,8-HxCDD	0.258	1.032		E		0.129		0.1	0.0	0.0	1.4%	0.0%
1,2,3,6,7,8-HxCDD	0.185	0.74		--		0.0925		0.1	0.0	0.0	1.0%	0.0%
1,2,3,7,8,9-HxCDD	0.187	0.748		J		0.0935		0.1	0.0	0.0	1.0%	0.0%
1,2,3,4,6,7,8-HpCDF	0.167	0.668	0.802	--		0.802	0.802	0.01	0.0	0.0	0.9%	2.4%
1,2,3,4,7,8,9-HpCDF	0.506	2.024		E		0.253		0.01	0.0	0.0	0.3%	0.0%
1,2,3,4,6,7,8-HpCDD	0.124	0.496	1.01	--		1.01	1.01	0.01	0.0	0.0	1.1%	3.0%
OCDF	0.358	1.432	8.34	--		8.34	8.34	0.0001	0.0	0.0	0.1%	0.2%
OCDD	0.0292	0.1168	6.78	--		6.78	6.78	0.0001	0.0	0.0	0.1%	0.2%
PCB-81	2.42	9.68		J		1.21		0.0001	0.0	0.0	0.0%	0.0%
PCB-77	2.12	8.48	6.28	J		6.28	1.57	0.0001	0.0	0.0	0.1%	0.0%
PCB-123	4.35	17.4	5.21	--		5.21	2.605	0.0001	0.0	0.0	0.1%	0.1%
PCB-118	4.12	16.48	108	--		108	108	0.0001	0.0	0.0	1.2%	3.2%
PCB-114	0.66	2.64	3.36	--		3.36	3.36	0.0005	0.0	0.0	0.2%	0.5%
PCB-105	5.44	21.76	40.5	--		40.5	40.5	0.0001	0.0	0.0	0.4%	1.2%
PCB-126	1.37	5.48		--		0.685		0.1	0.1	0.0	7.5%	0.0%
PCB-167	2.06	8.24	11.3	--		11.3	11.3	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	2.07	8.28	10.7	--		10.7	10.7	0.0005	0.0	0.0	0.6%	1.6%
PCB-157	2.2	8.8	3.24	--		3.24	1.62	0.0005	0.0	0.0	0.2%	0.2%
PCB-169	0.29	1.16		--		0.145		0.01	0.0	0.0	0.2%	0.0%
PCB-189	1.57	6.28		--		0.785		0.0001	0.0	0.0	0.0%	0.0%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	0.8	0.3	0.1	0.0	0.9	0.3

Sample ID **GAAOMB** ***Lab Blank*** **lab blank**

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.0413	0.1652		--		0.02065		0.1	0.0	0.0	0.7%	0.0%
2,3,7,8-TCDD	0.00611	0.0244		--		0.003055		1	0.0	0.0	1.0%	0.0%
1,2,3,7,8-PeCDF	0.0463	0.1852		--		0.02315		0.05	0.0	0.0	0.4%	0.0%
2,3,4,7,8-PeCDF	0.0424	0.1696		--		0.0212		0.5	0.0	0.0	3.5%	0.0%
1,2,3,7,8-PeCDD	0.111	0.444		--		0.0555		1	0.1	0.0	18.1%	0.0%
1,2,3,4,7,8-HxCDF	0.425	1.7		E		0.2125		0.1	0.0	0.0	6.9%	0.0%
1,2,3,6,7,8-HxCDF	0.352	1.408		E		0.176		0.1	0.0	0.0	5.8%	0.0%
2,3,4,6,7,8-HxCDF	0.0135	0.054	0.34	--		0.34	0.34	0.1	0.0	0.0	11.1%	28.6%
1,2,3,7,8,9-HxCDF	0.0148	0.0592	0.694	--		0.694	0.694	0.1	0.1	0.1	22.7%	58.3%
1,2,3,4,7,8-HxCDD	0.00975	0.039		--		0.004875		0.1	0.0	0.0	0.2%	0.0%
1,2,3,6,7,8-HxCDD	0.00849	0.034		--		0.004245		0.1	0.0	0.0	0.1%	0.0%
1,2,3,7,8,9-HxCDD	0.00825	0.033		--		0.004125		0.1	0.0	0.0	0.1%	0.0%
1,2,3,4,6,7,8-HpCDF	0.657	2.628		D		0.16425		0.01	0.0	0.0	0.5%	0.0%
1,2,3,4,7,8,9-HpCDF	0.0472	0.1888	0.513	--		0.513	0.513	0.01	0.0	0.0	1.7%	4.3%
1,2,3,4,6,7,8-HpCDD	0.684	2.736		E		0.342		0.01	0.0	0.0	1.1%	0.0%
OCDF	0.00617	0.0247	6.46	--		6.46	6.46	0.0001	0.0	0.0	0.2%	0.5%
OCDD	0.0114	0.0456	4.98	--		4.98	4.98	0.0001	0.0	0.0	0.2%	0.4%
PCB-81	0.219	0.876		J		0.1095		0.0001	0.0	0.0	0.0%	0.0%
PCB-77	0.214	0.856	2.42	--		2.42	2.42	0.0001	0.0	0.0	0.1%	0.2%
PCB-123	0.344	1.376	0.997	--		0.997	0.4985	0.0001	0.0	0.0	0.0%	0.0%
PCB-118	0.315	1.26	57.9	J		57.9	28.95	0.0001	0.0	0.0	1.9%	2.4%
PCB-114	0.348	1.392	1.49	--		1.49	1.49	0.0005	0.0	0.0	0.2%	0.6%
PCB-105	0.355	1.42	22.7	J		22.7	11.35	0.0001	0.0	0.0	0.7%	1.0%
PCB-126	1.27	5.08		--		0.635		0.1	0.1	0.0	20.8%	0.0%
PCB-167	0.0771	0.3084	2.29	--		2.29	2.29	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	0.0838	0.3352	6.83	--		6.83	6.83	0.0005	0.0	0.0	1.1%	2.9%
PCB-157	0.0872	0.3488	1.54	--		1.54	1.54	0.0005	0.0	0.0	0.3%	0.6%
PCB-169	0.329	1.316		--		0.1645		0.01	0.0	0.0	0.5%	0.0%
PCB-189	0.0446	0.1784	0.664	--		0.664	0.664	0.0001	0.0	0.0	0.0%	0.1%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	0.2	0.1	0.1	0.0	0.3	0.1

Sample ID **GAANLCS** ***Lab Spike*** **lab spike**

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.398	1.592	19	--		19	19	0.1	1.9	1.9	0.7%	0.7%
2,3,7,8-TCDD	0.316	1.264	18.2	--		18.2	18.2	1	18.2	18.2	6.6%	6.7%
1,2,3,7,8-PeCDF	0.382	1.528	111	--		111	111	0.05	5.6	5.6	2.0%	2.0%
2,3,4,7,8-PeCDF	0.322	1.288	93.4	--		93.4	93.4	0.5	46.7	46.7	16.9%	17.1%
1,2,3,7,8-PeCDD	0.252	1.008	114	--		114	114	1	114.0	114.0	41.2%	41.8%
1,2,3,4,7,8-HxCDF	0.166	0.664	95	--		95	95	0.1	9.5	9.5	3.4%	3.5%
1,2,3,6,7,8-HxCDF	0.146	0.584	89	--		89	89	0.1	8.9	8.9	3.2%	3.3%
2,3,4,6,7,8-HxCDF	0.206	0.824	101	--		101	101	0.1	10.1	10.1	3.7%	3.7%
1,2,3,7,8,9-HxCDF	0.322	1.288	83.2	--		83.2	83.2	0.1	8.3	8.3	3.0%	3.0%
1,2,3,4,7,8-HxCDD	0.131	0.524	101	--		101	101	0.1	10.1	10.1	3.7%	3.7%
1,2,3,6,7,8-HxCDD	0.109	0.436	87.2	--		87.2	87.2	0.1	8.7	8.7	3.2%	3.2%
1,2,3,7,8,9-HxCDD	0.111	0.444	70.4	J		70.4	35.2	0.1	7.0	3.5	2.5%	1.3%
1,2,3,4,6,7,8-HpCDF	0.134	0.536	81.8	--		81.8	81.8	0.01	0.8	0.8	0.3%	0.3%
1,2,3,4,7,8,9-HpCDF	0.332	1.328	95.6	--		95.6	95.6	0.01	1.0	1.0	0.3%	0.4%
1,2,3,4,6,7,8-HpCDD	0.084	0.336	106	--		106	106	0.01	1.1	1.1	0.4%	0.4%
OCDF	0.296	1.184	212	--		212	212	0.0001	0.0	0.0	0.0%	0.0%
OCDD	0.158	0.632	192	--		192	192	0.0001	0.0	0.0	0.0%	0.0%
PCB-81	2.62	10.48	252	J		252	126	0.0001	0.0	0.0	0.0%	0.0%
PCB-77	2.32	9.28	256	J		256	128	0.0001	0.0	0.0	0.0%	0.0%
PCB-123	3.13	12.52	220	--		220	220	0.0001	0.0	0.0	0.0%	0.0%
PCB-118	2.96	11.84	304	BJ	<5*B	304	152	0.0001	0.0	0.0	0.0%	0.0%
PCB-114	3.25	13	196	--		196	196	0.0005	0.1	0.1	0.0%	0.0%
PCB-105	3.33	13.32	239	--		239	239	0.0001	0.0	0.0	0.0%	0.0%
PCB-126	1.68	6.72	220	--		220	220	0.1	22.0	22.0	8.0%	8.1%
PCB-167	1.07	4.28	220	--		220	220	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	1.07	4.28	210	--		210	210	0.0005	0.1	0.1	0.0%	0.0%
PCB-157	1.14	4.56	205	--		205	205	0.0005	0.1	0.1	0.0%	0.0%
PCB-169	1.14	4.56	224	--		224	224	0.01	2.2	2.2	0.8%	0.8%
PCB-189	0.688	2.752	204	--		204	204	0.0001	0.0	0.0	0.0%	0.0%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	251.9	248.4	24.7	24.7	276.6	273.0

Sample ID GAAOLCS *Lab Spike* lab spike

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.465	1.86	19	NJ		9.5	0	0.1	1.0	0.0	0.3%	0.0%
2,3,7,8-TCDD	0.346	1.384	17.1	--		17.1	17.1	1	17.1	17.1	6.3%	6.3%
1,2,3,7,8-PeCDF	0.219	0.876	106	--		106	106	0.05	5.3	5.3	1.9%	1.9%
2,3,4,7,8-PeCDF	0.192	0.768	93.2	--		93.2	93.2	0.5	46.6	46.6	17.1%	17.1%
1,2,3,7,8-PeCDD	0.256	1.024	112	--		112	112	1	112.0	112.0	41.0%	41.1%
1,2,3,4,7,8-HxCDF	0.298	1.192	96.8	--		96.8	96.8	0.1	9.7	9.7	3.5%	3.6%
1,2,3,6,7,8-HxCDF	0.256	1.024	89.7	--		89.7	89.7	0.1	9.0	9.0	3.3%	3.3%
2,3,4,6,7,8-HxCDF	0.335	1.34	97.6	--		97.6	97.6	0.1	9.8	9.8	3.6%	3.6%
1,2,3,7,8,9-HxCDF	0.495	1.98	85.5	--		85.5	85.5	0.1	8.6	8.6	3.1%	3.1%
1,2,3,4,7,8-HxCDD	0.0924	0.3696	99.8	--		99.8	99.8	0.1	10.0	10.0	3.7%	3.7%
1,2,3,6,7,8-HxCDD	0.0838	0.3352	85.7	--		85.7	85.7	0.1	8.6	8.6	3.1%	3.1%
1,2,3,7,8,9-HxCDD	0.0817	0.3268	82.2	--		82.2	82.2	0.1	8.2	8.2	3.0%	3.0%
1,2,3,4,6,7,8-HpCDF	0.163	0.652	82.2	--		82.2	82.2	0.01	0.8	0.8	0.3%	0.3%
1,2,3,4,7,8,9-HpCDF	0.352	1.408	93.5	--		93.5	93.5	0.01	0.9	0.9	0.3%	0.3%
1,2,3,4,6,7,8-HpCDD	0.102	0.408	107	--		107	107	0.01	1.1	1.1	0.4%	0.4%
OCDF	0.175	0.7	197	--		197	197	0.0001	0.0	0.0	0.0%	0.0%
OCDD	0.0805	0.322	198	--		198	198	0.0001	0.0	0.0	0.0%	0.0%
PCB-81	0.351	1.404	251	J		251	125.5	0.0001	0.0	0.0	0.0%	0.0%
PCB-77	0.293	1.172	249	--		249	249	0.0001	0.0	0.0	0.0%	0.0%
PCB-123	0.645	2.58	222	--		222	222	0.0001	0.0	0.0	0.0%	0.0%
PCB-118	0.589	2.356	325	J		325	162.5	0.0001	0.0	0.0	0.0%	0.0%
PCB-114	0.682	2.728	217	--		217	217	0.0005	0.1	0.1	0.0%	0.0%
PCB-105	0.696	2.784	265	J		265	132.5	0.0001	0.0	0.0	0.0%	0.0%
PCB-126	0.253	1.012	220	--		220	220	0.1	22.0	22.0	8.0%	8.1%
PCB-167	0.17	0.68	211	--		211	211	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	0.184	0.736	232	--		232	232	0.0005	0.1	0.1	0.0%	0.0%
PCB-157	0.192	0.768	216	--		216	216	0.0005	0.1	0.1	0.0%	0.0%
PCB-169	0.235	0.94	226	--		226	226	0.01	2.3	2.3	0.8%	0.8%
PCB-189	0.0359	0.1436	219	--		219	219	0.0001	0.0	0.0	0.0%	0.0%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	248.5	247.6	24.7	24.7	273.3	272.3

Sample ID 779 ***PE Clean*** **Ref-F-16**

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.0372	0.1488		--		0.0186		0.1	0.0	0.0	0.1%	0.0%
2,3,7,8-TCDD	0.014	0.056		--		0.007		1	0.0	0.0	0.3%	0.0%
1,2,3,7,8-PeCDF	0.0514	0.2056		--		0.0257		0.05	0.0	0.0	0.1%	0.0%
2,3,4,7,8-PeCDF	0.0451	0.1804		--		0.02255		0.5	0.0	0.0	0.5%	0.0%
1,2,3,7,8-PeCDD	0.106	0.424	0.502	--		0.502	0.502	1	0.5	0.5	24.5%	28.8%
1,2,3,4,7,8-HxCDF	0.764	3.056		E		0.382		0.1	0.0	0.0	1.9%	0.0%
1,2,3,6,7,8-HxCDF	1.37	5.48		E		0.685		0.1	0.1	0.0	3.3%	0.0%
2,3,4,6,7,8-HxCDF	0.122	0.488	0.472	B	<5*B	0.472	0.118	0.1	0.0	0.0	2.3%	0.7%
1,2,3,7,8,9-HxCDF	0.487	1.948		E	<5*B	0.2435		0.1	0.0	0.0	1.2%	0.0%
1,2,3,4,7,8-HxCDD	0.0672	0.2688	1.03	--		1.03	1.03	0.1	0.1	0.1	5.0%	5.9%
1,2,3,6,7,8-HxCDD	0.0574	0.2296	2	--		2	2	0.1	0.2	0.2	9.8%	11.5%
1,2,3,7,8,9-HxCDD	0.0561	0.2244	1.38	--		1.38	1.38	0.1	0.1	0.1	6.7%	7.9%
1,2,3,4,6,7,8-HpCDF	11.4	45.6		D		2.85		0.01	0.0	0.0	1.4%	0.0%
1,2,3,4,7,8,9-HpCDF	0.165	0.66	0.529	B	<5*B	0.529	0.13225	0.01	0.0	0.0	0.3%	0.1%
1,2,3,4,6,7,8-HpCDD	0.219	0.876	66.4	--		66.4	66.4	0.01	0.7	0.7	32.4%	38.1%
OCDF	0.0859	0.3436	9.86	B	<5*B	9.86	4.93	0.0001	0.0	0.0	0.0%	0.0%
OCDD	0.808	3.232	770	--		770	770	0.0001	0.1	0.1	3.8%	4.4%
PCB-81	1.53	6.12		J		0.765		0.0001	0.0	0.0	0.0%	0.0%
PCB-77	1.94	7.76	5.99	B	<5*B	5.99	1.4975	0.0001	0.0	0.0	0.0%	0.0%
PCB-123	0.982	3.928	5.63	--		5.63	5.63	0.0001	0.0	0.0	0.0%	0.0%
PCB-118	0.897	3.588	256	BJ	<5*B	256	128	0.0001	0.0	0.0	1.2%	0.7%
PCB-114	1.03	4.12	6.06	B	<5*B	6.06	3.03	0.0005	0.0	0.0	0.1%	0.1%
PCB-105	1.05	4.2	116	J		116	58	0.0001	0.0	0.0	0.6%	0.3%
PCB-126	1.32	5.28		I		0.66		0.1	0.1	0.0	3.2%	0.0%
PCB-167	0.283	1.132	14.5	--		14.5	14.5	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	0.308	1.232	36.3	--		36.3	36.3	0.0005	0.0	0.0	0.9%	1.0%
PCB-157	0.32	1.28	9.35	--		9.35	9.35	0.0005	0.0	0.0	0.2%	0.3%
PCB-169	0.286	1.144		--		0.143		0.01	0.0	0.0	0.1%	0.0%
PCB-189	0.205	0.82	2.44	B	<5*B	2.44	1.22	0.0001	0.0	0.0	0.0%	0.0%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	1.9	1.7	0.1	0.0	2.1	1.7

Sample ID 206 ***PE Low Std*** **PEL-F-4**

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.522	2.088	3.94	NJ		1.97	0	0.1	0.2	0.0	0.3%	0.0%
2,3,7,8-TCDD	0.18	0.72	11.2	I		11.2	11.2	1	11.2	11.2	15.4%	15.5%
1,2,3,7,8-PeCDF	0.271	1.084	96.8	--		96.8	96.8	0.05	4.8	4.8	6.6%	6.7%
2,3,4,7,8-PeCDF	0.23	0.92	26.9	--		26.9	26.9	0.5	13.5	13.5	18.5%	18.6%
1,2,3,7,8-PeCDD	0.236	0.944	20.8	I		20.8	20.8	1	20.8	20.8	28.5%	28.8%
1,2,3,4,7,8-HxCDF	0.48	1.92	29.7	--		29.7	29.7	0.1	3.0	3.0	4.1%	4.1%
1,2,3,6,7,8-HxCDF	0.443	1.772	2.13	--		2.13	2.13	0.1	0.2	0.2	0.3%	0.3%
2,3,4,6,7,8-HxCDF	0.555	2.22	75.2	I		75.2	75.2	0.1	7.5	7.5	10.3%	10.4%
1,2,3,7,8,9-HxCDF	0.651	2.604	65.2	--		65.2	65.2	0.1	6.5	6.5	8.9%	9.0%
1,2,3,4,7,8-HxCDD	0.193	0.772	9.84	I		9.84	9.84	0.1	1.0	1.0	1.4%	1.4%
1,2,3,6,7,8-HxCDD	0.164	0.656	14.5	--		14.5	14.5	0.1	1.5	1.5	2.0%	2.0%
1,2,3,7,8,9-HxCDD	0.165	0.66	3.22	J		3.22	1.61	0.1	0.3	0.2	0.4%	0.2%
1,2,3,4,6,7,8-HpCDF	7.15	28.6		D	<5*B	1.7875		0.01	0.0	0.0	0.0%	0.0%
1,2,3,4,7,8,9-HpCDF	0.445	1.78	63.4	--		63.4	63.4	0.01	0.6	0.6	0.9%	0.9%
1,2,3,4,6,7,8-HpCDD	0.176	0.704	99.2	--		99.2	99.2	0.01	1.0	1.0	1.4%	1.4%
OCDF	0.176	0.704	33.6	B	<5*B	33.6	16.8	0.0001	0.0	0.0	0.0%	0.0%
OCDD	0.194	0.776	382	--		382	382	0.0001	0.0	0.0	0.1%	0.1%
PCB-81	5.19	20.76		IJ		2.595		0.0001	0.0	0.0	0.0%	0.0%
PCB-77	4.5	18	20.3	BIJ	<5*B	20.3	10.15	0.0001	0.0	0.0	0.0%	0.0%
PCB-123	14	56		--	<5*B	7		0.0001	0.0	0.0	0.0%	0.0%
PCB-118	13.3	53.2	1280	CJ		1280	640	0.0001	0.1	0.1	0.2%	0.1%
PCB-114	14.6	58.4	31.8	--		31.8	15.9	0.0005	0.0	0.0	0.0%	0.0%
PCB-105	15	60	627	C		627	627	0.0001	0.1	0.1	0.1%	0.1%
PCB-126	1.81	7.24	3.73	I		3.73	1.865	0.1	0.4	0.2	0.5%	0.3%
PCB-167	1.7	6.8	70.7	--		70.7	70.7	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	1.7	6.8	190	--		190	190	0.0005	0.1	0.1	0.1%	0.1%
PCB-157	1.81	7.24	45	--		45	45	0.0005	0.0	0.0	0.0%	0.0%
PCB-169	1.43	5.72		EI		0.715		0.01	0.0	0.0	0.0%	0.0%
PCB-189	1.55	6.2	9.58	--		9.58	9.58	0.0001	0.0	0.0	0.0%	0.0%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	72.2	71.8	0.7	0.4	72.9	72.2

Sample ID **PC00353** ***PE Low Std*** **PEL**

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.152	0.608	1.37	NJ		0.685	0	0.1	0.1	0.0	0.3%	0.0%
2,3,7,8-TCDD	0.0183	0.0732	4.07	--		4.07	4.07	1	4.1	4.1	15.4%	15.5%
1,2,3,7,8-PeCDF	0.105	0.42	35.6	--		35.6	35.6	0.05	1.8	1.8	6.7%	6.8%
2,3,4,7,8-PeCDF	0.0976	0.3904	10	--		10	10	0.5	5.0	5.0	18.9%	19.1%
1,2,3,7,8-PeCDD	0.0303	0.1212	7.01	--		7.01	7.01	1	7.0	7.0	26.5%	26.7%
1,2,3,4,7,8-HxCDF	0.0683	0.2732	11.2	--		11.2	11.2	0.1	1.1	1.1	4.2%	4.3%
1,2,3,6,7,8-HxCDF	0.0593	0.2372	0.69	--		0.69	0.69	0.1	0.1	0.1	0.3%	0.3%
2,3,4,6,7,8-HxCDF	0.0772	0.3088	27	--		27	27	0.1	2.7	2.7	10.2%	10.3%
1,2,3,7,8,9-HxCDF	0.106	0.424	25.4	--		25.4	25.4	0.1	2.5	2.5	9.6%	9.7%
1,2,3,4,7,8-HxCDD	0.0093	0.0372	3.73	--		3.73	3.73	0.1	0.4	0.4	1.4%	1.4%
1,2,3,6,7,8-HxCDD	0.00847	0.0339	5.4	--		5.4	5.4	0.1	0.5	0.5	2.0%	2.1%
1,2,3,7,8,9-HxCDD	0.00837	0.0335	1.01	--		1.01	1.01	0.1	0.1	0.1	0.4%	0.4%
1,2,3,4,6,7,8-HpCDF	2.61	10.44		D		0.6525		0.01	0.0	0.0	0.0%	0.0%
1,2,3,4,7,8,9-HpCDF	0.188	0.752	25.7	--		25.7	25.7	0.01	0.3	0.3	1.0%	1.0%
1,2,3,4,6,7,8-HpCDD	0.0788	0.3152	36.7	--		36.7	36.7	0.01	0.4	0.4	1.4%	1.4%
OCDF	0.00468	0.0187	13.1	B	<5*B	13.1	6.55	0.0001	0.0	0.0	0.0%	0.0%
OCDD	0.0486	0.1944	166	--		166	166	0.0001	0.0	0.0	0.1%	0.1%
PCB-81	0.322	1.288	0.345	J		0.345	0.08625	0.0001	0.0	0.0	0.0%	0.0%
PCB-77	0.37	1.48	8	B	<5*B	8	4	0.0001	0.0	0.0	0.0%	0.0%
PCB-123	4.64	18.56	26.9	--		26.9	26.9	0.0001	0.0	0.0	0.0%	0.0%
PCB-118	4.24	16.96	1180	CJ		1180	590	0.0001	0.1	0.1	0.4%	0.2%
PCB-114	4.7	18.8	28.8	--		28.8	28.8	0.0005	0.0	0.0	0.1%	0.1%
PCB-105	4.8	19.2	588	CJ		588	294	0.0001	0.1	0.0	0.2%	0.1%
PCB-126	1.15	4.6	1.51	--		1.51	0.755	0.1	0.2	0.1	0.6%	0.3%
PCB-167	0.282	1.128	52.9	--		52.9	52.9	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	0.307	1.228	158	--		158	158	0.0005	0.1	0.1	0.3%	0.3%
PCB-157	0.319	1.276	35.7	--		35.7	35.7	0.0005	0.0	0.0	0.1%	0.1%
PCB-169	0.409	1.636		EI		0.2045		0.01	0.0	0.0	0.0%	0.0%
PCB-189	0.249	0.996	7.07	--		7.07	7.07	0.0001	0.0	0.0	0.0%	0.0%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	26.0	25.9	0.4	0.3	26.5	26.2

Sample ID 573 ***PE Med Std*** **PEM-F-4**

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.689	2.756	6.26	NJ		3.13	0	0.1	0.3	0.0	0.2%	0.0%
2,3,7,8-TCDD	0.49	1.96	54	--		54	54	1	54.0	54.0	39.5%	40.7%
1,2,3,7,8-PeCDF	0.205	0.82	36.9	--		36.9	36.9	0.05	1.8	1.8	1.3%	1.4%
2,3,4,7,8-PeCDF	0.192	0.768	0.895	--		0.895	0.895	0.5	0.4	0.4	0.3%	0.3%
1,2,3,7,8-PeCDD	0.319	1.276	49.2	--		49.2	49.2	1	49.2	49.2	36.0%	37.1%
1,2,3,4,7,8-HxCDF	0.433	1.732	42.1	--		42.1	42.1	0.1	4.2	4.2	3.1%	3.2%
1,2,3,6,7,8-HxCDF	0.374	1.496	2.67	--		2.67	2.67	0.1	0.3	0.3	0.2%	0.2%
2,3,4,6,7,8-HxCDF	0.608	2.432	34.2	--		34.2	34.2	0.1	3.4	3.4	2.5%	2.6%
1,2,3,7,8,9-HxCDF	0.903	3.612	8.67	--		8.67	8.67	0.1	0.9	0.9	0.6%	0.7%
1,2,3,4,7,8-HxCDD	0.126	0.504	38.6	--		38.6	38.6	0.1	3.9	3.9	2.8%	2.9%
1,2,3,6,7,8-HxCDD	0.105	0.42	3.56	--		3.56	3.56	0.1	0.4	0.4	0.3%	0.3%
1,2,3,7,8,9-HxCDD	0.106	0.424	55	J		55	27.5	0.1	5.5	2.8	4.0%	2.1%
1,2,3,4,6,7,8-HpCDF	46.2	184.8		D		11.55		0.01	0.1	0.0	0.1%	0.0%
1,2,3,4,7,8,9-HpCDF	0.205	0.82	27.5	--		27.5	27.5	0.01	0.3	0.3	0.2%	0.2%
1,2,3,4,6,7,8-HpCDD	0.0994	0.3976	45.3	--		45.3	45.3	0.01	0.5	0.5	0.3%	0.3%
OCDF	0.185	0.74	181	--		181	181	0.0001	0.0	0.0	0.0%	0.0%
OCDD	0.16	0.64	346	--		346	346	0.0001	0.0	0.0	0.0%	0.0%
PCB-81	1.24	4.96	10.1	J		10.1	5.05	0.0001	0.0	0.0	0.0%	0.0%
PCB-77	1.24	4.96	256	J		256	128	0.0001	0.0	0.0	0.0%	0.0%
PCB-123	262	1050		--		131		0.0001	0.0	0.0	0.0%	0.0%
PCB-118	247	988	14500	SJ		14500	7250	0.0001	1.5	0.7	1.1%	0.5%
PCB-114	284	1140	635	S		635	317.5	0.0005	0.3	0.2	0.2%	0.1%
PCB-105	291	1160	10700	S		10700	10700	0.0001	1.1	1.1	0.8%	0.8%
PCB-126	5.69	22.76	67.6	--		67.6	67.6	0.1	6.8	6.8	4.9%	5.1%
PCB-167	21	84	1220	S		1220	1220	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	21	84	2960	S		2960	2960	0.0005	1.5	1.5	1.1%	1.1%
PCB-157	22.4	89.6	689	S		689	689	0.0005	0.3	0.3	0.3%	0.3%
PCB-169	8.65	34.6		E		4.325		0.01	0.0	0.0	0.0%	0.0%
PCB-189	7.6	30.4	120	--		120	120	0.0001	0.0	0.0	0.0%	0.0%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	125.2	122.0	11.5	10.6	136.7	132.6

Sample ID **PC00802** ***PE Med Std*** **PEM**

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.188	0.752	4.17	NJ		2.085	0	0.1	0.2	0.0	0.2%	0.0%
2,3,7,8-TCDD	0.105	0.42	34	--		34	34	1	34.0	34.0	39.9%	41.7%
1,2,3,7,8-PeCDF	0.0712	0.2848	24	--		24	24	0.05	1.2	1.2	1.4%	1.5%
2,3,4,7,8-PeCDF	0.612	2.448		E		0.306		0.5	0.2	0.0	0.2%	0.0%
1,2,3,7,8-PeCDD	0.062	0.248	28.7	--		28.7	28.7	1	28.7	28.7	33.7%	35.2%
1,2,3,4,7,8-HxCDF	0.231	0.924	25.5	--		25.5	25.5	0.1	2.6	2.6	3.0%	3.1%
1,2,3,6,7,8-HxCDF	0.202	0.808	1.55	--		1.55	1.55	0.1	0.2	0.2	0.2%	0.2%
2,3,4,6,7,8-HxCDF	0.257	1.028	21.2	--		21.2	21.2	0.1	2.1	2.1	2.5%	2.6%
1,2,3,7,8,9-HxCDF	0.401	1.604	5.24	--		5.24	5.24	0.1	0.5	0.5	0.6%	0.6%
1,2,3,4,7,8-HxCDD	0.0766	0.3064	24.4	--		24.4	24.4	0.1	2.4	2.4	2.9%	3.0%
1,2,3,6,7,8-HxCDD	0.0697	0.2788	1.86	--		1.86	1.86	0.1	0.2	0.2	0.2%	0.2%
1,2,3,7,8,9-HxCDD	0.0691	0.2764	39.6	--		39.6	39.6	0.1	4.0	4.0	4.6%	4.9%
1,2,3,4,6,7,8-HpCDF	0.194	0.776	30	--		30	30	0.01	0.3	0.3	0.4%	0.4%
1,2,3,4,7,8,9-HpCDF	0.413	1.652	19.4	--		19.4	19.4	0.01	0.2	0.2	0.2%	0.2%
1,2,3,4,6,7,8-HpCDD	0.704	2.816	28.4	--		28.4	28.4	0.01	0.3	0.3	0.3%	0.3%
OCDF	0.0813	0.3252	98.9	--		98.9	98.9	0.0001	0.0	0.0	0.0%	0.0%
OCDD	0.0982	0.3928	227	--		227	227	0.0001	0.0	0.0	0.0%	0.0%
PCB-81	7.72	30.88	4.6	J		3.86		0.0001	0.0	0.0	0.0%	0.0%
PCB-77	8.78	35.12	164	--		164	164	0.0001	0.0	0.0	0.0%	0.0%
PCB-123	16.7	66.8	294	--		294	294	0.0001	0.0	0.0	0.0%	0.0%
PCB-118	15.2	60.8	14000	SJ		14000	7000	0.0001	1.4	0.7	1.6%	0.9%
PCB-114	18.1	72.4	510	C		510	510	0.0005	0.3	0.3	0.3%	0.3%
PCB-105	18.4	73.6	8350	CJ		8350	4175	0.0001	0.8	0.4	1.0%	0.5%
PCB-126	19.9	79.6	44	--		44	22	0.1	4.4	2.2	5.2%	2.7%
PCB-167	0.943	3.772	773	C		773	773	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	1.03	4.12	2020	C		2020	2020	0.0005	1.0	1.0	1.2%	1.2%
PCB-157	1.07	4.28	460	--		460	460	0.0005	0.2	0.2	0.3%	0.3%
PCB-169	5.44	21.76		E		2.72		0.01	0.0	0.0	0.0%	0.0%
PCB-189	0.978	3.912	79.7	I		79.7	79.7	0.0001	0.0	0.0	0.0%	0.0%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	77.0	76.6	8.2	4.9	85.2	81.5

Sample ID 246 ***Split*** **split 555**

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	8	32	5.56	NJ		2		0.1	0.2	0.0	0.7%	0.0%
2,3,7,8-TCDD	0.404	1.616		I		0.202		1	0.2	0.0	0.7%	0.0%
1,2,3,7,8-PeCDF	0.589	2.356	43	--		43	43	0.05	2.2	2.2	7.1%	8.2%
2,3,4,7,8-PeCDF	0.501	2.004	8.29	--		8.29	8.29	0.5	4.1	4.1	13.7%	15.9%
1,2,3,7,8-PeCDD	1.61	6.44		EI	<5*B	0.805		1	0.8	0.0	2.7%	0.0%
1,2,3,4,7,8-HxCDF	7.8	31.2	79.4	--		79.4	79.4	0.1	7.9	7.9	26.2%	30.4%
1,2,3,6,7,8-HxCDF	6.96	27.84	44.6	--		44.6	44.6	0.1	4.5	4.5	14.7%	17.1%
2,3,4,6,7,8-HxCDF	9.29	37.16	20.9	--		20.9	10.45	0.1	2.1	1.0	6.9%	4.0%
1,2,3,7,8,9-HxCDF	13.3	53.2	18.3	--		18.3	9.15	0.1	1.8	0.9	6.0%	3.5%
1,2,3,4,7,8-HxCDD	0.787	3.148	2.67	--		2.67	1.335	0.1	0.3	0.1	0.9%	0.5%
1,2,3,6,7,8-HxCDD	0.662	2.648	5.1	--		5.1	5.1	0.1	0.5	0.5	1.7%	2.0%
1,2,3,7,8,9-HxCDD	0.669	2.676	3.54	J		3.54	1.77	0.1	0.4	0.2	1.2%	0.7%
1,2,3,4,6,7,8-HpCDF	199	796		D		49.75		0.01	0.5	0.0	1.6%	0.0%
1,2,3,4,7,8,9-HpCDF	0.421	1.684	87.3	--		87.3	87.3	0.01	0.9	0.9	2.9%	3.3%
1,2,3,4,6,7,8-HpCDD	0.615	2.46	94.2	--		94.2	94.2	0.01	0.9	0.9	3.1%	3.6%
OCDF	0.151	0.604	1310	--		1310	1310	0.0001	0.1	0.1	0.4%	0.5%
OCDD	0.209	0.836	498	--		498	498	0.0001	0.0	0.0	0.2%	0.2%
PCB-81	0.976	3.904	6.79	J		6.79	3.395	0.0001	0.0	0.0	0.0%	0.0%
PCB-77	11.8	47.2	166	J		166	83	0.0001	0.0	0.0	0.1%	0.0%
PCB-123	14.2	56.8		--	<5*B	7.1		0.0001	0.0	0.0	0.0%	0.0%
PCB-118	13.4	53.6	2800	CJ		2800	1400	0.0001	0.3	0.1	0.9%	0.5%
PCB-114	15.5	62	72.4	--		72.4	72.4	0.0005	0.0	0.0	0.1%	0.1%
PCB-105	15.9	63.6	1290	C		1290	1290	0.0001	0.1	0.1	0.4%	0.5%
PCB-126	1.6	6.4	20.8	--		20.8	20.8	0.1	2.1	2.1	6.9%	8.0%
PCB-167	3.79	15.16	155	--		155	155	0.00001	0.0	0.0	0.0%	0.0%
PCB-156	3.81	15.24	356	--		356	356	0.0005	0.2	0.2	0.6%	0.7%
PCB-157	4.05	16.2	87.1	--		87.1	87.1	0.0005	0.0	0.0	0.1%	0.2%
PCB-169	1.01	4.04	3.18	--		3.18	1.59	0.01	0.0	0.0	0.1%	0.1%
PCB-189	2.87	11.48	39.7	--		39.7	39.7	0.0001	0.0	0.0	0.0%	0.0%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	27.4	23.5	2.8	2.6	30.2	26.1

Sample ID 407 ***Split*** **split 273**

Analyte	Analytical Limits EDL	QL	Results Conc	Flag	<5x in MB found	Adjusted Concentrations* Full	Quant	WHO TEFs Human	Calculated TEQs (ppt) Full	Quant	Percent of Total TEQ Full	Quant
2,3,7,8-TCDF	0.379	1.516	8.33	NJ		4.165	0	0.1	0.4	0.0	0.9%	0.0%
2,3,7,8-TCDD	0.374	1.496		E		0.187		1	0.2	0.0	0.4%	0.0%
1,2,3,7,8-PeCDF	0.16	0.64	6.66	--		6.66	6.66	0.05	0.3	0.3	0.7%	0.7%
2,3,4,7,8-PeCDF	0.157	0.628	5.6	--		5.6	5.6	0.5	2.8	2.8	5.8%	6.1%
1,2,3,7,8-PeCDD	0.114	0.456	2.06	--		2.06	2.06	1	2.1	2.1	4.2%	4.5%
1,2,3,4,7,8-HxCDF	0.536	2.144	13.8	--		13.8	13.8	0.1	1.4	1.4	2.8%	3.0%
1,2,3,6,7,8-HxCDF	0.552	2.208	7.96	--		7.96	7.96	0.1	0.8	0.8	1.6%	1.7%
2,3,4,6,7,8-HxCDF	1.15	4.6	5.63	--		5.63	5.63	0.1	0.6	0.6	1.2%	1.2%
1,2,3,7,8,9-HxCDF	2.96	11.84		E	<5*B	1.48		0.1	0.1	0.0	0.3%	0.0%
1,2,3,4,7,8-HxCDD	0.797	3.188	3.29	--		3.29	3.29	0.1	0.3	0.3	0.7%	0.7%
1,2,3,6,7,8-HxCDD	0.657	2.628	5.33	--		5.33	5.33	0.1	0.5	0.5	1.1%	1.2%
1,2,3,7,8,9-HxCDD	0.678	2.712	3.75	--		3.75	3.75	0.1	0.4	0.4	0.8%	0.8%
1,2,3,4,6,7,8-HpCDF	0.511	2.044	52.6	--		52.6	52.6	0.01	0.5	0.5	1.1%	1.1%
1,2,3,4,7,8,9-HpCDF	1.11	4.44	12.1	--		12.1	12.1	0.01	0.1	0.1	0.2%	0.3%
1,2,3,4,6,7,8-HpCDD	1.29	5.16	128	--		128	128	0.01	1.3	1.3	2.6%	2.8%
OCDF	0.114	0.456	175	--		175	175	0.0001	0.0	0.0	0.0%	0.0%
OCDD	0.167	0.668	720	--		720	720	0.0001	0.1	0.1	0.1%	0.2%
PCB-81	4.93	19.72	32.8	J		32.8	16.4	0.0001	0.0	0.0	0.0%	0.0%
PCB-77	5.37	21.48	1600	C		1600	1600	0.0001	0.2	0.2	0.3%	0.3%
PCB-123	178	712	578	C		578	289	0.0001	0.1	0.0	0.1%	0.1%
PCB-118	163	652	17700	SJ		17700	8850	0.0001	1.8	0.9	3.6%	1.9%
PCB-114	197	788	634	C		634	317	0.0005	0.3	0.2	0.7%	0.3%
PCB-105	201	804	13800	CJ		13800	6900	0.0001	1.4	0.7	2.8%	1.5%
PCB-126	57.4	229.6	293	C		293	293	0.1	29.3	29.3	60.3%	63.6%
PCB-167	8.62	34.48	2760	C		2760	2760	0.00001	0.0	0.0	0.1%	0.1%
PCB-156	9.38	37.52	5340	C		5340	5340	0.0005	2.7	2.7	5.5%	5.8%
PCB-157	9.76	39.04	1330	C		1330	1330	0.0005	0.7	0.7	1.4%	1.4%
PCB-169	2.99	11.96	20.8	--		20.8	20.8	0.01	0.2	0.2	0.4%	0.5%
PCB-189	6.34	25.36	756	C		756	756	0.0001	0.1	0.1	0.2%	0.2%

* Adjusted concentrations were modified using validation flags.

	Dioxin/Furan Only		PCBs Only		All Analytes	
	Full	Quant	Full	Quant	Full	Quant
The Dioxin/Furan Only Full TEQ is used in this report. --->	11.9	11.2	36.6	34.9	48.6	46.1

APPENDIX B

CONGENER FINGERPRINTS

THIS APPENDIX IS NOT PROVIDED AT THIS TIME

For a copy, contact Laura Williams (USEPA, Region VIII)